

The Orchadian

Volume 16, Number 2

www.anos.org.au

December 2008

Official Journal of the Australasian Native Orchid Society

Royal Botanic Gardens
Melbourne

16 DEC 2008

LIBRARY

Arachnorchis procera,
a rare species from the south-west of
Western Australia.

Photo Graeme Bradburn

The Orchadian

Official Journal of The Australasian Native Orchid Society Inc.
Founded August 1963

www.anos.org.au

Dedicated to the Study and Conservation of Australasian Native Orchids
Print Post Approved PP239628/00002, ISBN 0474-3342

Patrons: Walter T. Upton AOM and Robert Napier

December 2008 Volume 16 Number 2

CONTENTS

Features

Western Australian Spider Orchids.....	Peter Eygelshoven	52
The 2008 Kempsey Speciosum Spectacular (Report).....	Callyn Farrell	54
The Legend of Noonee – an Aboriginal Legend of the first Greenhood	Keith Holmes	57
Serendipity and Pollinators Reveal a New Cryptic Spider Orchid Species related to <i>Caladenia concinna</i> (Rupp) D Jones et M Clements	Colin C Bower	60
<i>Microtis alboviridis</i> (Orchidaceae): a new onion orchid species from south-west Western Australia	Robert J. Bates	70
ANOS Geelong Group Show Report	Frances Wilde	75
Letter to the Editor		78
The finding of <i>Caladenia cadyi</i> (<i>Arachnorchis cadyi</i>)	Leo Cady	81
Notes on the <i>Cleisostoma gjellerupii</i> (J.J.Sm.) Garay complex in New Guinea.....	Paul Ormerod	82
<i>Calochilus kalaru</i> (Orchidaceae), a poorly known but endangered new species from south-eastern New South Wales	David L. Jones	88
ANOS Kabi Group Inc., Spring Show Report	Rhonda Harvey	92

Photographs

<i>Arachnorchis procera</i>	Front Cover
<i>Arachnorchis nivalis</i>	52
<i>Arachnorchis attingens</i> subs. <i>attingens</i>	52
<i>Dendrobium</i> Midas Touch 'Greta'.....	53
<i>Dendrobium</i> Andrew's Summit 'Madison'.....	53
<i>Dendrobium</i> Kayla.....	53
<i>Caladenia concinna</i>	65 and 68
<i>Caladenia</i> affin. <i>concinna</i>	69
<i>Microtis alboviridis</i>	72
<i>Microtis alba</i>	73
<i>Microtis alboviridis</i> (drawing).....	74
<i>Sarcochilus fitzgeraldii</i>	76
<i>Sarcochilus</i> Melba.....	76
<i>Dockrillia chordiformis</i>	77
<i>Dockrillia flagella</i>	77
<i>Caladenia cadyi</i>	80
<i>Cleisostoma clemensiae</i> (drawing).....	85
<i>Cleisostoma isuaravanum</i> (drawing).....	86
<i>Cleisostoma palusdosum</i> (drawing).....	87
<i>Cleisostoma gjellerupii</i> (drawing).....	87
<i>Calochilus kalaru</i> (drawing).....	90
<i>Dendrobium</i> Brinawa Sunset 'Heart Lip'.....	93
<i>Dendrobium</i> Rutherford Blushing Bride x <i>Den. speciosum</i> var. <i>curvicaule</i>	93
<i>Dendrobium polysema</i> "Bitech".....	96
<i>Pterostylis</i> Cutie 'Harolds Pride'.....	96
<i>Dendrobium mohlianum</i> x <i>Dendrobium melinanthum</i>	96

COUNCIL OF ANOS Inc.

President: Graham Slater
Vice-President: Elvi Hochguertel
Secretary: Irene Bodell
Treasurer: Robert Murch
Past President: Roslyn Capell

ANOS Councillors:

Bill Dobson
Lorraine Dobson
Bill Olsen
Graeme Bradburn
Peter Presland
Matt Hochguertel
Mike Fish
Brian Abbott
John Creeggan -
(National Registrar of Judges)

Editor, *The Orchadian*:

Peter Eygelshoven
13 Weeroona Ave,
Elanora Heights, NSW 2101.
peygelshoven@optusnet.com.au

Membership Officer:

Bill Dobson;
bdobson@optusnet.com.au
All membership enquires should be directed
to Bill Dobson.

Conservation Officer:

Alan Stephenson:
astephenon@vtown.com.au

ANOS CORRESPONDENCE:

A.N.O.S. Inc. P.O. Box 318,
Willoughby, N.S.W. 2068

ARTICLES:

Items for consideration may be submitted
to the Editor on disk or via e-mail using
Microsoft Word, Works or Wordperfect.
Good quality sharp colour slides, prints or
illustrations may be submitted with articles.
300dpi digital photos can also be submitted.
All efforts will be made to return images after
publication.

COPYRIGHT:

Material in *The Orchadian* is subject to
copyright and may not be reproduced without
permission from the author.

SUBSCRIPTION RATES (AUD\$)

\$45 Australia
\$55 Asia/Pacific
\$65 Other Countries

Editorial.

In this issue we have some interesting and
curious articles. First up is a show report
from young, 12 year old Callyn Farrell on
the Speciosum Spectacular at Kempsey.
He was so impressed with the show and the
friendship that he was compelled to write a
report. Hopefully we will hear more from young
Callyn. Next is a wonderful aboriginal story
passed on by Keith Holmes on the first
greenhood. I believe this is the first such
story printed in *The Orchadian*, if there are
more similar stories out there I think we
would love to hear them. Colin Bower has a
curious article on how he accidentally came
across a new orchid species, well worth
reading.

Robert Bates, Paul Ormerod and David
Jones describe new species and Leo Cady
tells his story on finding *Caladenia cadyii*
many years ago. It is great to hear from Leo
again, Leo wrote many articles in the earlier
issues of this journal. We also have some
show reports from Kabi Group, Rhonda
Harvey and Geelong Group Frances Wilde.

So something a little different this issue, but
all are worth reading.

I wish all readers the best for Christmas and
the New Year and hope next year is better
for all with less drought conditions. Stay safe
and enjoy the festive season responsibly.

Regards Peter.

**CORRECTION
TO DAVID JONES PAPER****THE ORCHADIAN**

Volume 16 issue No 1, pages 34 -35.

The drawings in the paper were reversed.
Fig. 1 in the original paper is actually
Specularantha glyphida and Fig. 2 is actually
S. ventricosa.

My apologies to David and to the readers.



Arachnorchis nivalis, Moses Rocks WA



Arachnorchis attingens subs, *attingens*.
Moses Rocks WA

Photos Graeme Bradburn

Western Australian Spider Orchids.

I have always had the desire to see the great Spider Orchids of Western Australia. The situation lent itself this year with the Western Australian Orchid Spectacular and Conference and with orchid colleague, Graeme Bradburn, who would be in Perth on his trip around Australia at this time. I attended the conference with Alan Stephenson to promote ANOS. Graeme also joined us at the conference for a few days rest and to catch up with some locals who generously gave us details to their favourite areas to see the great Spider Orchids.

So after the conference Graeme, Alan and myself were invited to stay with Phil Bunney at his home near Bunbury for a few days, where Phil showed us some of his favourite areas and some of the rare and endangered orchid species found nearby. Evenings were spent trying to identify the species we photographed during the day and sampling the local wines and cheese.

On Wednesday Alan had to fly back home to Nowra for some orchid commitments, but Graeme and I continued south to Cape Leeuwin along the coast road to see areas given to us by John Ewings and Bob Ludlowe. We found most of the species on their lists and some others as well.

During our trip we often meet up with other orchid enthusiasts doing the same thing and we exchanged details of the orchids and places where certain species were found.

On behalf of Graeme, Alan and myself I would like to say thanks to all the WA membes for the wonderful hospitality given to us on our visit, especially Phil Bunney. Graeme and I have decided we will return. The AOC Conference and Show will be held in Perth in 2012 and if you are able to attend it is well worth visiting Western Australia in the Spring.

Peter Eygelshoven



Dendrobium Midas Touch 'Greta',
grower Don Cruickshank



Dendrobium Andrew's Summit 'Madison'
HCC ANOS & AM AOC/NSW,
grower John Zietsch.



Dendrobium Kayla, grower Don Cruickshank.

Photos Callyn Farrell

The 2008 Kempsey Speciosum Spectacular.

Callyn Farrell

Age 12

In September 2008 I visited the Kempsey Speciosum Spectacular hosted by Ted and Winsome Walmsley. I travelled to Kempsey with my pop Grahame Young and friend Ron Young. My pop introduced me to the world of orchids two years ago and I now have my own orchids and bush house. This was the ideal time of the year to see the beautiful display of Speciosums. Despite the terrible weather we were having in Newcastle we still left for our trip to Kempsey and when we arrived the weather was beautiful as was the display.

The display of orchids was absolutely spectacular, including for the first time this year Australian Native Hybrids, I really enjoyed taking pictures of the variety of Speciosums and hybrids, orchids have also opened another interest for me which includes photography.

The Champions included *Dendrobium speciosum* ('Windermere' x 'Ted') 'Timothy', awarded HCC ANOS & AM AOC/NSW, which took Grand Champion and owned by Ted and Winsome Walmsley. They also won Reserve Hybrid Champion with *Dendrobium* Jayden 'Anthony'. Champion Hybrid went to John Zietsch with *Dendrobium* Andrew's Summit 'Madison' awarded an HCC ANOS & AM AOC/NSW. Champion Species was won by Fred Fear with *Dockrillia nugentii* 'Jeffrey'.

The quality of the orchids we viewed was great and the scent was quite strong when we walked into the bush house, I felt the sprays on these Speciosums were fuller and longer than the ones I viewed last year.

Being just a kid hanging around with adults can sometimes make me feel a little out of place but at this show everyone was so welcoming I felt like I belonged and just slotted in so I would take this opportunity to say thankyou to everyone who made me feel welcome. I would also like to thank Ted and Winsome Walmsley and their family for having everyone at this magnificent display on their property.

If you have not visited this show I would highly recommend you mark it on the calendar for 2009 and I hope to see you there next year.

-oOo-

The Council of the
AUSTRALASIAN NATIVE ORCHID SOCIETY INC.

wish all its members a
Merry Christmas and a Happy New Year
and a wonderful growing season in the year ahead.



Cedarvale Orchids

*Specialist breeders of Australian
Native Orchid Species and Hybrids*

- Mail orders our specialty
- Send SAE for latest listing (Sept 2007)
- Phone prior to visiting

Ross & Rhonda Harvey

16 Heather-Anne Drive

DRAPER QLD 4520

Telephone: (07) 3289 1953

Facsimile: (07) 3289 2638

email:

cedarvaleorchids@cedarvaleorchids.com

www.cedarvaleorchids.com

EARTH TO JOY



Lloyd & Mandy
Edwards
125 Isaacs Rd,
Lorne NSW 2439

Specializing in breeding and growing
native *Dendrobium* and *Sarcochilus*
Species and Hybrids.

Phone, write or web us for a catalogue.

Nursery open by appointment.

Buses and Groups welcome.

P.O. Box 27,

Kendall 2439 N.S.W.

Phone - 02 6556 9766 -

WEB - www.etjorchids.com.au

18th Australian Orchid Council Conference & Show 2009

Hosted by Maribyrnong Orchid Society and
Affiliated Victorian Societies

8th – 13th Sept 2009

Come and see: Orchid displays from all around Australia, 20 orchid vendors, Overseas and Australian speakers, Tours to Anglesea area searching for Native Orchids complete with BBQ lunch. "Shop till you drop" tour and lunch in China Town and more.

REGISTER NOW

For more enquiries phone the Secretary (03) 5283 1364 or

Email: ef.wilde@bigpond.com or

Post: 15 William Road, LITTLE RIVER, Victoria 3211

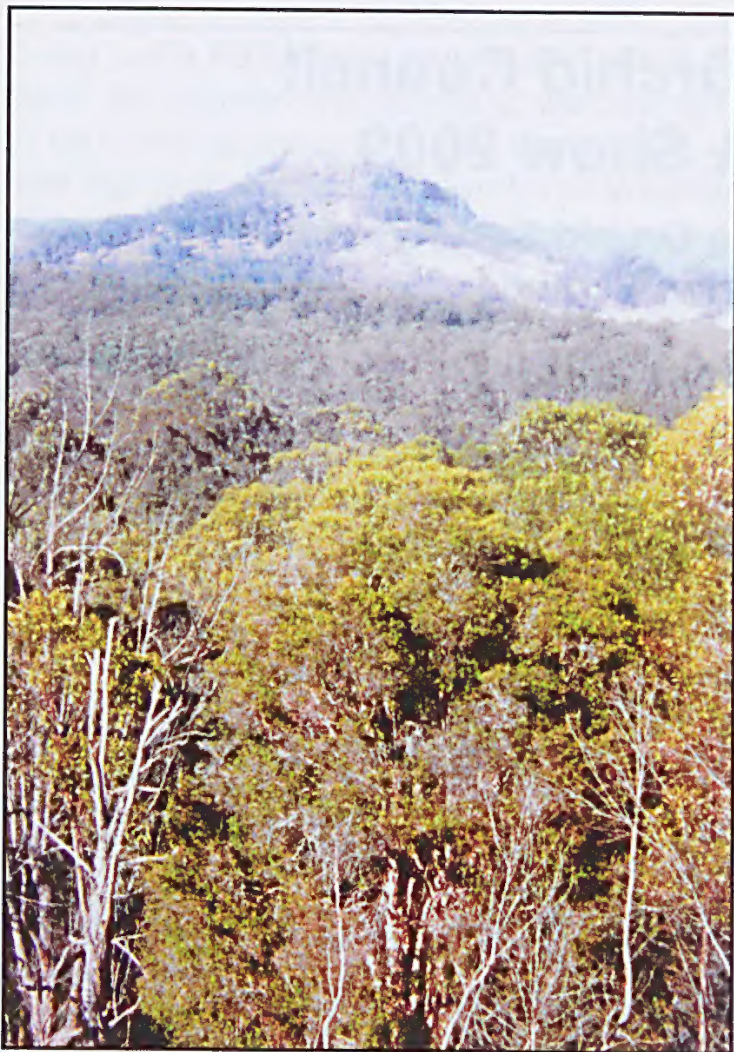
Early bird Registrations run from Sept 2008 to March 2009

www.mosorchid.org



Kooloomboom behind Oakendale Homestead.

Photos Keith Holmes



Kooloomboom from the north.



Pterostylis curta, drawing by Netta Lee.

The Legend of Noonee

– an Aboriginal Legend of the first Greenhood.

Passed on by
Keith Holmes
46 Kurrajong St
Dorrigo NSW 2453

Prologue

When I was a boy growing up at Berowra, just north of Sydney, every spare penny or threepence that I earned or was given to me was deposited each Monday in my School Bank Account. Our dairy farm was surrounded by bush and sandstone gullies where I spent all my spare time searching for orchids. This was in the early 1940's. When I had saved eight shillings I caught a train to Sydney (fare sixpence return) and at the bookstand at Central Station I bought a copy of "The Orchids of New South Wales" by Reverend H.M.R. Rupp. In the train on the way home I began my steep learning curve of understanding botanical terms.

Soon I could put a name to most of the local orchids – but occasionally one would have me stumped and I would take it to the Botanical Gardens in Sydney (another sixpence) for Mr Rupp to identify on the days he came to work in the Herbarium. Within a mile radius of our farm my brother Sandy and I collected 58 named species. I wonder how many are still there? That well-worn copy of Rupp is one of my treasured possessions.

One day while in the Berowra bush with my father we saw an Autumn Greenhood. Proudly showing off my new knowledge of orchids I told him "That is a *Pterostylis acuminata*". Dad shook his head and said "No, that is Noonee". He then related the aboriginal legend that had been passed down to him from his Grandfather William Henry Holmes who was a friend of the aborigines and was accepted into their tribe when he was young. The tribe wandered in the area between Port Stevens and inland to Dungog on the mid-north coast of New South Wales in the early years of the nineteenth century.

Each year in the Autumn as the days grew cooler the tribe would move inland from the coast to the Williams River. One of the camp sites was near the present locality of Glenoak, almost in the shadow of a conical mountain with vertical cliffs

around the crest. William Henry Holmes' father Thomas had received a grant of land here in 1830 which he named "Oakendale". The mountain on the land was called 'The Sugarloaf' or on modern maps Mt Columbey. To the aborigines it was Kooloomboom.

The Legend

Marloo, the maker of storms, lived on the mountain Kooloomboom. To the aboriginal tribe Kooloomboom was a very sacred place and could only be approached by initiated men. Long ago the tribe was camped by a stream now known as the Williams River. While the men were hunting wildfowl along the river or kangaroos, wallaroos and wallabies in the woodlands, the women were catching small marsupials and reptiles or collecting grass seeds and fruit in the bush. Noonee was the young daughter of the chief of the tribe. She was most beautiful and everyone's favourite. One day while Noonee was accompanying the women in their food gathering she was so engrossed in her searching, that she wandered away from the others. Unknown to herself and the others she was wandering gradually up the sloping hillside of Kooloomboom.

Old Marloo looked down and saw the girl desecrating his sacred mountain home. He

worked himself into a great rage. Clouds swirled over the mountain and lightning and thunder flashed and rambled. Noonee was frightened and took shelter under a thick green bush. In a fit of fury Marloo threw a bolt of lightning and struck Noonee dead. As Marloo's rage abated the storm clouds cleared away and the sun shone again. Marloo looked down to see the body of the beautiful girl lying under the bush. He was so filled with remorse at his terrible act that he turned her into a greenhood orchid so that she would live for evermore in her ancestral home.

If you are in the bush and you see a little greenhood orchid, look inside the hood of the flower. There you will see little black Noonee sheltering under her green bush as she did during that terrible storm so long ago.

-oOo-

ORCHIDACEOUS BOOKS

Specialist supplier of fine orchid literature

Large selection of new and pre-owned titles available.

Browse our website at your leisure
www.orchidaceousbooks.com.au
or send for your catalogue.

Grahame & Margaret Muller
P.O. Box 4192, Tinana, Qld, 4650
Phone 07 4122 1251 Fax 07 4122 4539
email
books@orchidaceousbooks.com.au

ORCHIDMATE Coconut Husk Chips

CREATING A NEW STANDARD FOR ORCHID GROWING MEDIA

- ★ Guarantees Ph and Salt levels ideal for growing Orchids.
- ★ Has no unwanted fines, sold graded to specific sizes.
- ★ Is ready to use without further washing or additives.

100% ORGANIC ORCHID GROWING MEDIUM

ORCHIDMATE WATER SAVER

PREMIUM GRADE COCONUT HUSK CHIPS

SPECIALLY PREPARED FOR ORCHID GROWING

ORCHIDMATE coconut husk chips are an organic and totally natural byproduct of the coconut industry. ORCHIDMATE has developed an exclusive preparation technique to present coconut husk chip media best suited for the growing of Orchids, Bromeliads, Chloras, etc.

ORCHIDMATE coconut husk chips are 100% natural, organic, renewable & environmentally friendly.

ORCHIDMATE coconut husk chips have superior water holding capacity, while maintaining an excellent air filled porosity and the correct pH. ORCHIDMATE coconut husk chips protect plants & roots from extreme weather conditions in summer & winter & are suitable for all orchids. ORCHIDMATE coconut husk chips are available in a range of graded sizes to meet the demands of growing all orchids.

For best results:
Expand by soaking in water, drain and use.

ORCHIDMATE coconut husk chips will not decompose like bark & are easy to re-use. ORCHIDMATE coconut husk chips have stable and ideal pH & superior drainage qualities resulting in vigorous growth & strong root system.

ORCHIDMATE
Coconut Husk Chips
Exclusively supplied by:
EASY ORCHIDS
(02) 6682 2635
TINONEE ORCHIDS
(02) 6553 1012

Specification:
E.C. Max 0.5 d/m
pH 5.5 - 6.5

Weight: min 4.5kg

Health warning: This product contains microorganisms. Avoid breathing dust or mist. Wear protective mask if dusty. Wear gloves and keep product moist when handling. Wash hands immediately after use.

Developed by Aussie orchid growers specially for use in Aussie conditions

Use only ORCHIDMATE™ the market leader

Available from

EASY ORCHIDS

(02) 6682 2635

sales@easyorchids.com

www.easyorchids.com

EPBC ACT FIRST REVIEW

The Commonwealth Environment Minister has announced that he has setup a panel of experts to independently review the EPBC Act. Members of the public have been invited to make written submissions to the review panel by 19th December 2008. The final review report will be presented to the Minister by the panel on 31st October 2009. Relevant information about the review process and how to make a public submission can be found on the following website www.environment.gov.au/epbc/review or by phoning 1800 003 513.

On 31st October 2008 the Minister for the Environment Heritage and the Arts commissioned an independent review of the Environment Protection Biodiversity Conservation Act 1999 (EPBC Act), the central piece of environmental legislation of the Australian Government. Section 522A of the EPBC Act requires it to be reviewed every 10 years from its commencement.

This is the first review of the EPBC Act since its commencement on 16th July 2000. The review will assess the operation of the EPBC Act and the extent to which its objectives have been achieved.

Community participation in the review is encouraged. There will be opportunities for public input over the course of the review. The first stage of the public input process has commenced and written submissions are now invited. The closing date for submissions is 19th December 2008.

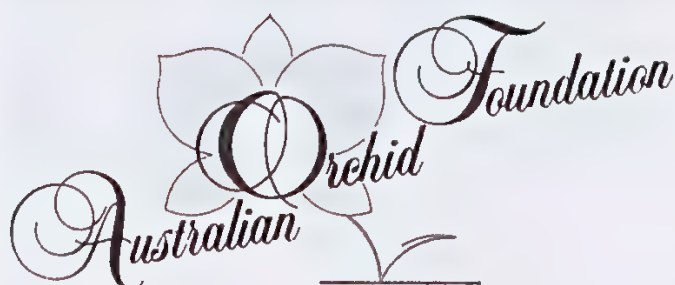
Public consultation sessions will also be held across the course of the review. Details will be made available on this website closer to these times. Interested parties are also invited to register to receive news and updates of the review.

I strongly urge all ANOS members to lodge a submission and also register to receive updates. This is the ideal time to register your interests and concerns regarding orchid conservation as a further 10 years for the second review will see numerous other species listed as Vulnerable, Endangered or Extinct.

The review is being undertaken by Dr. Allan Hawke.

Alan W Stephenson
National Conservation Officer
Australasian Native Orchid Society (ANOS)

-oOo-



The new address for the
Australian Orchid Foundation is
P.O. Box 322,
Essendon North, Vic. 3041

www.australianorchidfoundation.org.au

Serendipity and Pollinators Reveal a New Cryptic Spider Orchid Species related to *Caladenia concinna* (Rupp) D Jones et M Clements

Colin C Bower
PO Box 300
Orange, NSW 2800

Abstract

The chance discovery of a new orchid species related to the Neat Spider Orchid, *Caladenia concinna*, is described. The new species, *Caladenia* aff. *concinna*, has a distinctly different pollinator, *Neozeleboria* near *volatile*, than *C. concinna*, which is pollinated by *Aeolothynnus generosus*. *C. concinna* and the new taxon are very similar morphologically and may grow together in mixed colonies. The new species is currently known from only one location.

Serendipity

Serendipity often plays a key role in scientific discovery. New insights can result from accident as much as design. This article relates the events that led to the accidental discovery of a new cryptic pollinator-specific orchid species closely related to the Neat Spider Orchid, *Caladenia concinna*, at a site near Weethalle in central New South Wales.

In late winter 1997, I was returning to Orange by car from a work trip to Griffith, when I stopped by the roadside to answer 'a call of nature'. Twenty metres into the bush and out of sight of passers by I noticed I was standing in a patch of Spider Orchid leaves. Not knowing which species it was, I resolved to return in spring to find out. I was particularly interested because I had been investigating the pollinators of Spider Orchids (genus *Caladenia* subgenus *Calonema*) and this new location would be convenient for collecting flowers for pollinator testing. My work was following on from previous studies by Stoutamire (1983), Peakall (1990), Peakall and Beattie (1996) and Bower (1992) that had shown many Spider Orchids are pollinated exclusively by sexually deceived males of a single thynnine wasp species in a one to one relationship (see Box 1). In order to test whether this conclusion was generally true across all Spider Orchids,

I had been collecting the pollinators of as many species as I could from multiple populations across the species ranges. So the discovery of a new population was welcome. In September 1997, I returned to find a large population of the Neat Spider Orchid, *Caladenia concinna* (Plate 1), along with some *Caladenia stellata*.

Previous work

I had previously collected the pollinators of both species in the Rankins Springs – Griffith area and near Narranderra in 1992, 1995 and 1996. This work had shown that *C. concinna* populations from Sims Gap near Rankins Springs, the Cocoparra Range and Gillenbah State Forest near Narranderra were all pollinated by the thynnine wasp, *Aeolothynnus generosus*, a small black species with a row of white spots on either side of the abdomen (Plate 2). *A. generosus* was confirmed as a pollinator of *C. concinna* by observation of attempted mating by some individuals on the orchid labellum and the presence of pollinia from other flowers on the thorax of some individuals attracted to *C. concinna*. It was expected that the *C. concinna* flowers from Weethalle would also attract *A. generosus*.

A surprise result

When I used the Weethalle *C. concinna*

flowers as 'bait' for male thynnine wasps in Jimberoo State Forest near Rankins Springs, the wasp that responded was *Neozeleboria* near *volatile*, not *Aeolothynnus* *generosus*. This was completely unexpected since the Weethalle orchids seemed identical to the *C. concinna* flowers used previously. *N. nr. volatile* has an unspotted, reddish abdomen that distinguishes it readily from *A. generosus* in the field (Plate 3). *N. nr. volatile* males mated vigorously on the labella of bait flowers and one successfully removed the pollinia from the anther of a flower onto its thorax, indicating this wasp species is capable of pollinating Weethalle *C. concinna* (Experiment 1, Table 1). This result suggested that the population of *C. concinna* at Weethalle was either a previously unrecognised cryptic species, or that *C. concinna* has more than one thynnine wasp pollinator, which would also be unusual. I quickly decided to compare the attraction of Weethalle *C. concinna* flowers for *N. nr. volatile* with those from the nearby Sims Gap population. A dash was made to Sims Gap to collect flowers for a pollinator choice test in Jimberoo SF before it became too late in the day for wasp activity.

The pollinator choice experiment (see Box 2) was conducted at the same location in Jimberoo SF to test the above alternatives (Experiment 2, Table 1). The results showed conclusively that the two orchid populations each differentially attracted the two wasp species without overlap; *Aeolothynnus generosus* being attracted exclusively by Sims Gap *C. concinna* flowers and *Neozeleboria* *nr. volatile* responding exclusively to Weethalle *C. concinna*. This result favoured the hypothesis that the two orchid populations represent two different cryptic species within *C. concinna sensu lato*.

Quit while you're ahead!

This old adage from gambling could apply

equally to science, where it is sometimes jokingly said 'Never repeat an experiment once you have a good result'. Of course, I did decide to repeat the experiment, but in a new location. Ten days later, with fresh flowers from the Weethalle and Sims Gap populations, I went to Binya State Forest near Griffith to reinforce the previous result by repeating it. The outcome was yet another surprise (Experiment 3, Table 2). The Sims Gap flowers attracted 35 *A. generosus* as expected, but the Weethalle flowers weakly attracted five male *Aeolothynnus beatrix* and one *A. generosus*. Another 10 days later, I conducted five further tests in Binya SF (Table 1) two of which also included flowers from the *C. concinna* population in Gillenbah SF. The only wasp attracted in all five tests was *A. generosus* which responded to the flowers from all three *C. concinna* populations, including Weethalle, and exhibited mating behaviour on Sims Gap and Weethalle flowers.

The apparently contradictory results between Binya SF and Jimberoo SF had two possible explanations:

1. Individual *C. concinna* flowers at Weethalle can attract two wasp species as pollinators. However, the initial results obtained in Jimberoo SF, where both pollinators are present, do not support this interpretation.
2. The most likely explanation is that there are two flower types in *C. concinna* at Weethalle, one attracting *Aeolothynnus generosus* and the other attracting *Neozeleboria* *nr. volatile*. By chance, the second type was used in the initial experiments in Jimberoo SF and the first type was present in the experiments in Binya SF.

The problem resolved

In spring 1998, I returned to Weethalle to test the second hypothesis above. Rather

than using my usual 'bait' of three flowers per test population per vial (see Box 2), flowers were tested individually in 1998 in Jimberoo SF. Thirty two single flowers were tested over two days (see Box 2). The flowers were taken from seven concentrations or 'colonies' of *C. concinna* in an east-west oriented strip about 160 m long by 30 m wide. The colonies were numbered one to seven from east to west. Individual flowers attracted only one of the two wasp species, with 21 flowers attracting only *Neozeleboria* nr. *volatile* and 11 attracting only *Aeolothynnus generosus* (Table 2). Flowers attracting *N. nr. volatile* were most common at either end of the transect, while there was a concentration of flowers attracting *A. generosus* at colony 4 in the centre (Table 2). However, the two flower types grew together in colonies 1, 4 and 5. Both wasps were observed to remove pollinia from flowers; on nine occasions by *N. nr. volatile* and once by *A. generosus*. Clearly, there are two pollinator-specific types of flowers within *C. concinna* at Weethalle.

Morphological differences

The two groups of Weethalle flowers were examined closely to see if there was any way of telling them apart. No absolute difference between the two groups was found. However, flowers pollinated by *Neozeleboria* nr. *volatile* had much more prominent clubs on the dorsal and lateral sepals (Plate 3) than those pollinated by *Aeolothynnus generosus*; the clubs were broader than the point at which they joined the sepal. Most *A. generosus* flowers lacked clubs altogether (Plate 1), out of nine flowers examined only one had very slight clubbing (Plate 2). In addition, the *Neozeleboria* flowers usually had numerous reddish glands on the clubs, although four out of 19 flowers had relatively few glands. By contrast, two *Aeolothynnus* flowers lacked glands altogether, seven had very few glands, but one had numerous glands on indistinct clubs. The other main areas of difference were flower size and the

size and density of the labellum calli. The *Neozeleboria* flowers were larger on average, and had larger, more densely clustered labellum calli. However, although most *Aeolothynnus* flowers were small, one was large; and while most also had narrow, more widely spaced labellum calli (Plate 1), two had relatively dense clusters of calli.

What does it mean?

The high degree of pollinator-specificity shown by the two *C. concinna* types at Weethalle indicates it is highly unlikely that cross-pollination between the two types will occur. Therefore, the two types have separate gene pools and different evolutionary fates tied to their different pollinators. As such, they qualify as distinct species under most modern species concepts (Mayden 1997).

There are no morphological characteristics that can reliably distinguish all individuals of the two pollinator-specific flower types at Weethalle. To the human eye the two entities overlap considerably and hence are 'cryptic species'. Yet they are readily distinguished by their pollinators, which respond to the flowers primarily by chemical rather than visual signals. The difficulty we have in distinguishing these flower types is a symptom of the limited sensory abilities of humans, particularly our poor sense of smell (Mayr 1963). Field pollinator specificity testing similar to that outlined here has identified cryptic species in other sexually deceptive genera including *Ophrys* in Europe (Paulus and Gack 1990) and *Chiloglottis* in eastern Australia (Bower 1996, 2006). It is very likely there are other cryptic species awaiting discovery, serendipitous or otherwise, in the Australian Caladeniinae and Drakaeinae.

Acknowledgement

The Australian Orchid Foundation generously provided assistance with the

travel costs for this work.

References

- Bower, C.C. (1992). The use of pollinators in the taxonomy of sexually deceptive orchids in the subtribe Caladeniinae (Orchidaceae). *The Orchadian* 10: 331-338.
- Bower, C.C. (1996). Demonstration of pollinator-mediated reproductive isolation in sexually deceptive species of *Chiloglottis* (Orchidaceae: Calademiiinae). *Australian Journal of Botany* 44: 15-33.
- Bower, C.C. (2006). Specific pollinators reveal a cryptic taxon in the bird orchid, *Chiloglottis valida sensu lato* (Orchidaceae) in south-eastern Australia. *Australian Journal of Botany* 54: 53-64.
- Bower, C.C. & Brown, G.R. (1997). Hidden biodiversity: Detection of cryptic thynnine wasp species using sexually deceptive, female-mimicking orchids. *Memoirs of the Museum of Victoria* 56: 461-466.
- Mayden, R.L. (1997). A hierarchy of species concepts: the denouement in the saga of the species problem. In M.F. Claridge, H.A. Dawah and M.R. Wilson (Eds.). *Species: The Units of Biodiversity*. Chapman and Hall, London.
- Mayr, E. (1963). *Animal Species and Evolution*. Belknap Press, Cambridge, Massachusetts.
- Paulus, H.F. & Gack, C. (1990). Pollinators as prepollinating isolation factors: evolution and speciation in *Ophrys* (Orchidaceae). *Israel Journal of Botany* 39: 43-79.
- Peakall, R. (1990). Responses of male *Zaspilothynnus trilobatus* Turner wasps to females and the sexually deceptive orchid it pollinates. *Functional Ecology* 4: 159-167.
- Peakall, R., & Beattie, A.J. (1996). Ecological and genetic consequences of pollination by sexual deception in the orchid *Caladenia tentaculata*. *Evolution* 50: 2207-2220.
- Stoutamire, W.P. (1983). Wasp-pollinated species of *Caladenia* (Orchidaceae) in South-western Australia. *Australian Journal of Botany* 31: 383-394.

TINONEE ORCHIDS



Visit our Nursery on the
Mid North Coast near Taree, NSW.

*Large range of
Australian Native Orchids, species
& hybrids from tube to flowering size.*

**Buses/Club Groups
welcome by appointment.**

*Cultural talks & morning tea facilities
available. Free catalogue & cultural
notes available by request.*

**Nursery Hours: Mon-Fri 9am to 4pm
Saturday by Appointment**

TINONEE ORCHID NURSERY

768 Tinonee Road, Tinonee, 2430

Phone: (02) 6553 1012

www.tinoneeorchids.com orchids@tinoneeorchids.com

AUSTRALIAN DECIDUOUS TERRESTRIAL ORCHIDS

Available as....

Bare root plants: May – August

Dormant tubers: November – February

Easily grown species and hybrids from a range
of genera including: *Caladenia*, *Chiloglottis*,
Corybas, *Cyrtostylis*, *Diuris*, *Lyperanthus*,
Microtis, *Pterostylis* and *Thelymitra*.

NESBITTS ORCHIDS

PO BOX 72

WALKERVILLE, SOUTH AUSTRALIA 5081

Phone: (08) 8261 1550 Fax: (08) 8266 0372

Email: lesn@adam.com.au

Table 1. Thynnine wasps attracted in field choice experiments to *Caladenia concinna* sensu lato.

Thynnine wasp genera: *N.* = *Neozeleboria*, *A.* = *Aeolothynnus*.

<i>Caladenia</i> taxon	Source of orchid	Thynnine species	No. wasps caught	No. attempted matings	No. pollinia removals
Experiment 1. Jimberoo State Forest, NSW. 16.9.97, 10 exposures, Single species test					
<i>C. aff. concinna</i>	Weethalle	<i>N. nr. volatile</i>	8	5	1
Experiment 2. Jimberoo State Forest, NSW. 16.9.97, 26 exposures, Sympatric test					
<i>C. aff. concinna</i>	Weethalle	<i>N. nr. volatile</i>	10	6	
<i>C. concinna</i> s.s.	Sims Gap	<i>A. generosus</i>	16	1	
Experiment 3. Binya State Forest, NSW. 26.9.97, 35 exposures, Sympatric test					
<i>C. concinna</i> s.l.	Weethalle	<i>A. beatrix</i>	5	0	
		<i>A. generosus</i>	1	1	
<i>C. concinna</i> s.s.	Sims Gap	<i>A. generosus</i>	35	5	
Experiment 4. Binya State Forest, NSW. 6.10.97, 18 exposures, Sympatric test					
<i>C. concinna</i> s.l.	Weethalle		0		
<i>C. concinna</i> s.s.	Sims Gap	<i>A. generosus</i>	4		
Experiment 5. Binya State Forest, NSW. 6.10.97, 7 exposures, Sequential test					
A ¹ . <i>C. concinna</i> s.l.	Weethalle	<i>A. generosus</i>	1		
B. <i>C. concinna</i> s.s.	Sims Gap	<i>A. generosus</i>	3	1	
Experiment 6. Binya State Forest, NSW. 10.10.97, 15 exposures, Single species test					
<i>C. concinna</i> s.l.	Weethalle	<i>A. generosus</i>	7		
Experiment 7. Binya State Forest, NSW. 10.10.98, 8 exposures, Sequential test					
A. <i>C. concinna</i> s.s.	Gillenbah SF	<i>A. generosus</i>	5		
A. <i>C. concinna</i> s.l.	Weethalle	<i>A. generosus</i>	3	1	1
B. <i>C. concinna</i> s.s.	Sims Gap	<i>A. generosus</i>	2		
Experiment 8. Binya State Forest, NSW. 11.10.97, 16 exposures, Sympatric test					
<i>C. concinna</i> s.s.	Gillenbah SF	<i>A. generosus</i>	8		
<i>C. concinna</i> s.l.	Weethalle	<i>A. generosus</i>	6		
<i>C. concinna</i> s.s.	Sims Gap	<i>A. generosus</i>	4		

¹. A = Sample exposed for the full six mins of test
B = Sample exposed only for the second 3 mins of test



Plate 1. *Caladenia concinna*, Cocoparra Range, Rankins Springs, NSW.

Table 3. Differential attraction of two thynnine wasp species in Jimberoo SF, NSW by single flowers of *Caladenia concinna* sensu lato from Weethalle.

Thynnine wasp genera: *N.* = *Neozeleboria*, *A.* = *Aeolothynnus*.

Thynnine species (no. flowers)		
Colony	<i>N. nr. volatile</i>	<i>A. generosus</i>
1	6	1
2	3	0
3	1	0
4	2	9
5	1	1
6	5	0
7	3	0
Total	21	11

Box 1. The thynnine pollination syndrome.

Sexual deception of male thynnine wasps is one of the main pollination strategies in the Australian terrestrial orchid subfamily Caladeniinae and the only mechanism in the Drakaeinae. As many as 250 species in the *Caladenia* Alliance, *Chiloglottis* Alliance and the genera *Paracaleana*, *Drakaea* and others, are pollinated by male thynnines. Sexually deceptive orchid flowers mimic the shape, colour and odour of thynnine females in order to attract males for pollination. Dense clusters of maroon labellum calli (Plate 1) provide the physical mimicry of the female and along with scent glands on the tips of the petals and/or sepals, emit a volatile mimic (allomone) of the female wasp's sex pheromone (Stoutamire 1983). Pollination occurs when males attracted by the appropriate allomone attempt to mate and fly away with the orchid labellum.

Why is this pollination syndrome so common in Australian terrestrial orchids? Firstly, thynnine wasps are a very diverse and common subfamily throughout Australia and secondly, the life cycle of thynnines lends itself to exploitation by orchids. The female thynnine wasp mimicked by orchids is wingless and dependent on males for feeding. Females spend most of their lives burrowing underground in search of beetle larvae to parasitise. The larvae are paralysed by stinging and then eaten alive by the wasp larva after it hatches from the egg deposited on its skin. Crucially for the orchids, the female thynnine must return to the soil surface every few days in order to be fed and mated by a male. To attract their mates the females climb grass stems to heights between about 10 and 30 cm and call by emitting sex pheromones into the wind. Males patrol in looping flights around the breeding area to intercept the scent trails and zig zag upwind within the odour plume to the female. Thynnine pollinated sexually deceptive orchid flowers mimic the calling female on her grass stem. Once the male locates a female, who is usually much smaller, he immediately grasps her with his legs and flies rapidly upwards to avoid other incoming males. They usually land nearby, mate, and fly in copula to a food source, which may be a flowering tea tree or *Hakea*, or even scale insects emitting honeydew, where the male assists the female to feed. After feeding, the male returns the female to where he picked her up and drops her unceremoniously to the ground in flight, where she burrows in to resume her search for hosts.

Box 2. Pollinator choice experiments

Simply collecting the insects that visit orchids is not sufficient to be sure that each orchid has a specific pollinator. It is necessary to determine whether or not different orchids can attract and utilise each others pollinators. Accordingly, field pollinator choice testing procedures have been developed for this purpose (Bower 1996).

Picked flowers to attract males by the technique of 'baiting' (Peakall 1990) are placed in small glass vials of water in wood blocks on the ground to approximate the normal flower height. Up to three vials with flowers are placed 35 cm apart in a straight line and monitored simultaneously in choice tests. The tests in 1997 used three flowers per vial from each population to ensure a strong odour signal for males (Bower 1996). In 1998 only one flower was used per vial to avoid confounding results due to possible mixed samples of two cryptic taxa with different odours.

Flowers are exposed for a standard 3 min at each site before moving to a new site 20 m or more away. In 1997, new exposure sites were selected until a sample of 10 wasps was obtained for each set of flowers, if possible. In 1998, individual flowers were exposed until five attracted wasps were captured. If all five wasps belonged to the same species, the flower was removed from the vial to a sealed container with other flowers attracting the same wasp species. On two occasions, a flower appeared to attract four wasps of one species and one of the other. These flowers were retested, since the observer, or the wasp, may mistake the flower being approached (Bower 1996). This may happen if wind direction changes and odour trails cross or mix near the flowers, either causing the wasp to visually select a flower that was not the source of the odour being followed, or the observer to mistake the target flower. In both such cases one retest gave an unambiguous result.

Collected wasps were identified by Dr. Graham Brown and lodged in the Museum of the Northern Territory. Vouchers of the orchid populations from Weethalle were lodged at the Australian National Herbarium, Canberra.

Experimental design

The 1997 test utilised three designs; single species tests, sympatric choice experiments or sequential choice experiments, as defined in Bower (1996). Single species tests involve the exposure of a single sample of flowers to pollinator populations. Sympatric choice experiments compare two or more samples of orchid populations or taxa from the same geographic region and habitats. Sequential choice experiments test for variations in attractiveness to pollinators among samples of flowers of the same species. The experiment determines whether nil responses to one or more sets of flowers in previous choice experiments were due to the dominant attractiveness of other samples of the same species. It consists of two parts: (A) a 3 min exposure of sets of flowers with low or nil responses in a previous choice experiment, followed at the same site by (B) a further 3 min in which previously attractive flowers are added to the array as controls. Responses by wasps in the first 3 min to previously unattractive flowers show the flowers have similar odours and may be the same species as the more attractive samples. Flowers that remain unattractive, when there is a positive response to the controls, are considered to have a different odour and to represent a different species.



Plate 2. *Caladenia concinna* (Weethalle) and its pollinator, *Aeolothynnus generosus*.
(Note: small club and few glands on dorsal sepal).



Plate 3. *Caladenia* aff. *concinna* (Weethalle) with its pollinator, *Neozeleboria* nr. *volatile*.
(Note: large club with numerous glands on dorsal sepal).

***Microtis alboviridis* (Orchidaceae): a new onion orchid species from south-west Western Australia**

Robert J. Bates
38 Portmarnock St,
Fairview Park, South Australia 5126
Email bobbates63@hotmail.com

u24709

Abstract

Microtis alboviridis R. J. Bates a terrestrial orchid with restricted distribution in the Karri Forests of South-west Western Australia is formally described and illustrated and a key provided. This is part of a continuing study of the genus *Microtis* in Western Australia begun in 1980.

Introduction

This member of the *Microtis alba*-*M. media* complex of onion orchids restricted to the South-west of Western Australia was first recognised by the author as a separate entity during a visit to burnt Karri Forests near Pemberton in December 1987. It was first illustrated in the literature by Hoffmann and Brown in *Orchids of South-west Australia* in 1992 (plate 282) as *Microtis* aff. *alba*.

All members of the *M. alba*-*M. media* complex can be recognised by the granular papillose excrescences on the labellum margins.

The author follows DL Jones (2006) in treating the onion orchids as three genera namely *Microtis* R.Br. sensu stricto to which this new species belongs, as well as *Hydrorchis* D.L. Jones and *Microtidium* D.L. Jones. Despite Jones (2005) naming a second species, *H. cupularis* both *Hydrorchis* and *Microtidium* are better regarded as monotypic genera.

Key to the *Microtis* species of the *M. alba*-*M. media* complex,

1: Flowers clear white greater than 5 mm across, the labellum lobes divaricate, margins thickened..... *M. alba* R.Br.

- 1: Flowers green or greenish white less than 5 mm across, labellum lobes not divaricate, margins not thickened.....2
- 2: Flowers green and white, labellum apex bilobed with divergent lobes ... *M. alboviridis*.
- 2: Flowers wholly green, labellum apex not bilobed or the lobes not strongly divergent...
... *M. media* complex

***Microtis alboviridis* R.J. Bates**

***M. alboviridis* R.J. Bates, sp. nov., Fig. 1.**

A *Microtis alba* R. Br. *floribus alboviridis*, *partibus omnibus parvioribus*, *floribus minius olidis et species restricta in sylvis* "Jarrah" et "Karri" differt.

Typus: Western Australia, South-west division, Pindalup, 3. xi. 1926, *P. Barwise* sn (PERTH 00297232); (holo.: PERTH; iso.: PERTH).

Description:

Plants 20-40 cm high, very slender; tuber small, 7-10 mm diam., formed at the end of 2-5 cm long 'dropper roots'. *Leaf* linear, hollow- terete, fleshy, wholly green, erect to 30 cm long, its apex lax, base subtended by a cylindrical hyaline sheath to 1 cm long. *Scape* green filiform, emerging from within the leaf 6-20 cm above soil level, c. 2 mm diam. not compressed or ribbed. *Flowers*

12-30, large for the genus at c. 3 mm across, pale green and whitish, suberect in a loose irregular spike 5-10 cm long, each subtended by an ovate-acuminate bract c. 2 mm x 3 mm; pedicel 1-2 mm long, ovary ellipsoid, 4-6 mm long, strongly ribbed, only curved near the top, surface with fine immersed pale glands. *Dorsal sepal* ovate-oblong, 3-4 mm x 1.5-2 mm, pale green with white margins, shallowly galeate, apex apiculate, strongly upturned; *lateral sepals* linear-lanceolate c. 3 mm x 1 mm, green with paler edges, strongly revolute on either side of the ovary. *Petals* linear-oblong to 1.5 mm long, pale green, falcate, obtuse, free of the dorsal hood. *Labellum* oblong, pale green and off white, pendulous, c. 3 mm x 1.5 mm, with irregularly bifid, upturned apex with a long green decurved apiculus between the two non divaricate lobes, margins smooth for about half their length then crenulate, crystalline, beset with irregular, papillose, colourless, shortly stalked and sessile excrescences; laminar basal callus plate smooth, green, sub-crescentic, to 1 mm long, occupying most of the lamina, apical callus irregular, pale green somewhat pyramidal or mounded, to 0.8 mm long, sometimes extending onto the decurved apiculus as a spur. *Column* 0.4 mm x 0.3 mm, colourless, auricles quadrate, fleshy c. 1 mm x 1 mm; anther about 0.4 mm high, without a mucro; stigma reniform to circular, caudicle to 0.1 mm, viscid disc white, to 0.1 mm diam. Fig. 1.

Flowering

Flowers only after bushfires, mostly from November to January, the flowers with a soft fruity fragrance on warm days.

Distribution and ecology

Restricted to the far south-west of Western Australia from west of Albany to south of Perth, mostly within 50 km from the coast in burnt Karri or Jarrah Forest in fertile soils in high rainfall areas often on laterite slopes.

Distinguishing features

Although *M. alboviridis* can be recognised from its greenish white flowers, large

labellum with bifid apex and the fruity fragrance it closely resembles *Microtis alba* which has larger, wholly white flowers, a longer labellum with greatly divergent lateral lobes and a much stronger apricot fragrance. *M. alboviridis* looks like a hybrid between *M. alba* R.Br. and the all green *M. media* R.Br. but as it occurs in huge numbers flowering without either *M. alba* or *M. media* close by it can not be treated as an occasional hybrid. *M. alba* is mostly found on poorer sandy soils.

History

This species has been recognised as a distinct taxon since the 1980's. Bates (1990 page 57) suggested that *M. alba sens lato* was really two taxa, one with large white flowers the other with smaller greenish white flowers but refrained from formally describing the latter. Hoffman and Brown (1992) illustrated this form in plate 282 as an unnamed '*Microtis* species'.

Etymology

The name is from the Latin 'alba' white and viridis 'green' reflecting the dominant colours of the flowers.

Conservation status

Andrew Brown (pers comm.) notes that the species is becoming scarce due to forestry practices and decreasing rainfall. Probable status 3Vc.

Selected specimens examined

Near Pemberton, 10.xii. 1987, R. Bates 13111 (AD); North of Denmark, 12. xii.1987, R.Bates 13375 (AD); Two People Bay Road, east of Nannup Road, 29. xi. 2003; G. Brockman 1130 (PERTH); 4.8km east of Hopetoun on Jerracuttup North road, 26. ix. 1988, A.P. Brown 895, '30 000 plants' (PERTH); 10 miles north of Denmark, 7. xii. 1964, A. S. George 6461 (PERTH).

Acknowledgements

I thank Margaret Petridis for the illustrations, Helmut Toelken for the Latin diagnosis and various members of Western Australian



Microtis alboviridis - Crystal Springs WA.



Microtis alba - Pemberton WA.

native orchid groups (particularly Andrew Brown) for their assistance during my field work in WA over many years.
I also thank my wife Deidre for her companionship on field trips.

References

Bates, R (1984). The genus *Microtis* R. Br.: A taxonomic revision with notes on biology. *J. Adelaide Bot. Gard*: 7: 45-89.
Bates, R. (1986). The genus *Microtis* in

Australia. *Orchadian* 8:163.

Bates, R. (1990). 'Notes on the genus *Microtis*... in Western Australia...', *J. Adelaide Bot. Gard*.: 13:49-58.

Hoffman, N. & Brown, A. (1992). *Orchids of South-West Australia*, University of Western Australia press.

Jones, D.L. (2006)

-oOo-

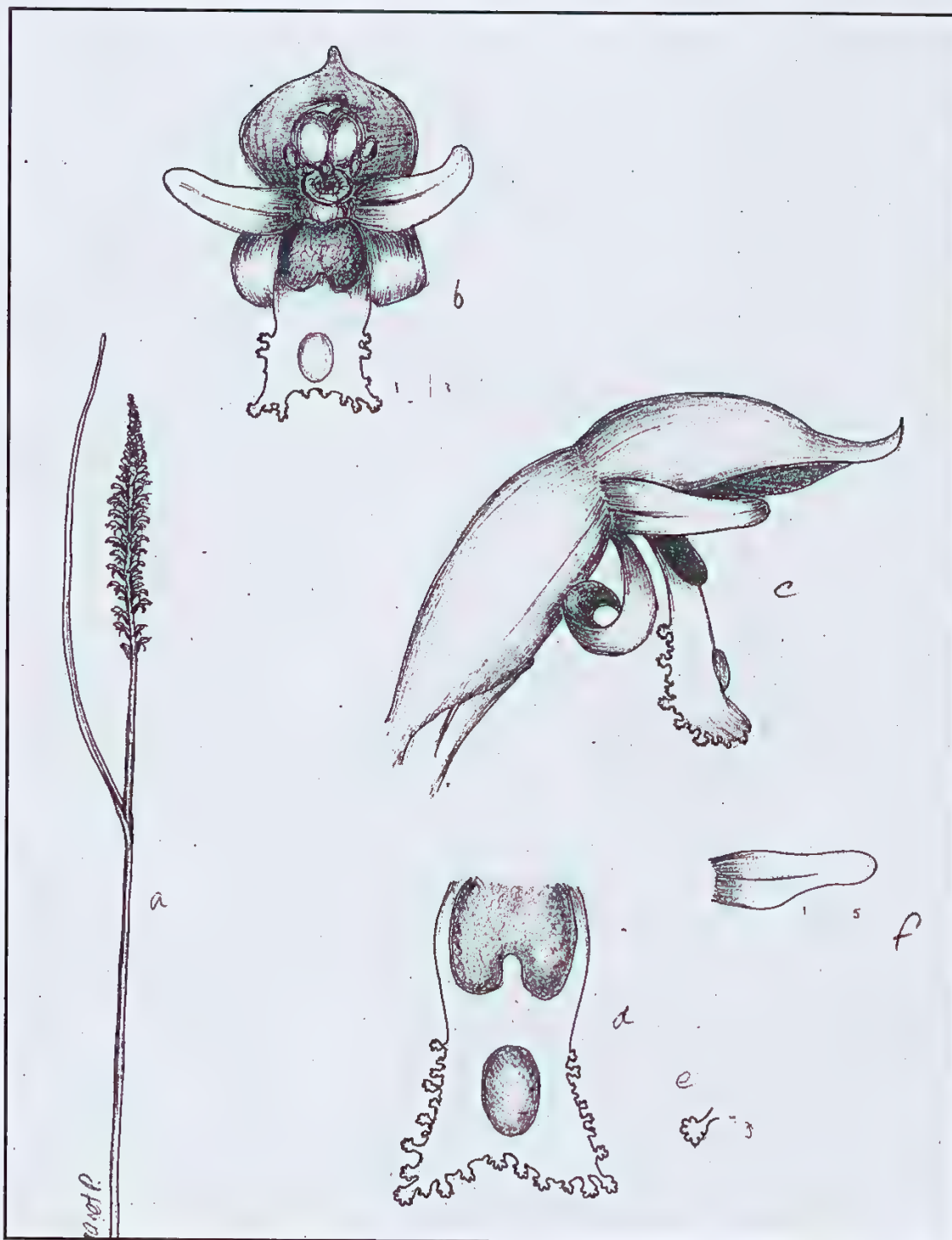


Fig. 1 *Microtis alboviridis* R. J Bates, a whole plant, b flower front view, c flower side view, d labellum, e marginal callus, f petal. Illustration by Margaret Petridis.

Australasian Native Orchid Society Geelong Group Inc

ANNUAL ORCHID SHOW 2008

Our orchid show on 1st & 2nd November was again a great success. There were 237 entries, only one plant less than last year, which is remarkable seeing as our members around the Geelong area have been on severe water restrictions for well over 12 months.

Our winner this year was Rosie Seljak, a member of the Geelong Orchid & Indoor Plant Club. Rosie usually exhibits her *Sarcochilus* Melba with us each year. She picked up this plant at a deceased estate auction a few years ago and it has proved to be a winner for her. It has won our Best Melba section before, but this year claimed the Grand Champion of the Show. So we congratulate Rosie on this win.

Runner up was a grower from Warrnambool, Des Hill. Des started displaying at our shows last year and this year received Reserve Champion with a *Sarcochilus fitzgeraldii*, a beautifully grown plant with upright spikes of mottled red blooms. Des also won Pre-eminent entry with a *S. Fitzhart*. The Champion Dockrillia was a nice little plant of *D. banksii* presented by Geoff & Zita Beilby.

It was interesting to see that the winner in the hartmannii class was won by a sibling of last year's winner, Don Bradshaw, who took 1st prize with his *S. hartmannii* 'Red Snow' No 1 x 'Red Snow'. He gave two friends Gerry Jufferman and Des Hill a seedling each from this cross and this year one of these came first in that class and the other was second.

It is really testing the skills of the growers in this area to keep their plants alive, so we hope that the next stage of water restrictions that are sure to be starting soon don't prove to be "in the too hard basket".

This year we handed over the judging to the newly formed ANOS Panel of Judges from the newly formed Melbourne Suburbs Group, we thank them for the great effort they made in travelling in peak hour traffic to get to us.

I would also like to thank all those who exhibited in our show again this year and for the work they do during the weekend. We have a marvellous little group of hard workers who do their utmost to make the show a success.

Frances Wilde
President



Des Hill with his Reserve Champion Orchid, *Sarcochilus fitzgeraldii*.



Champion Orchid of the Show *Sarcochilus Melba*, grower Rosie Seljak.

Photos Frances Wilde



Dockrillia chordiformis.



Dockrillia flagella, PNG Ramu River.

Photos David P Banks

Letters to the Editor.

Hi Peter,

Just to draw your attention to a couple of incorrect *Dockrillia* captions that appeared in the September 2008 issue of *The Orchadian* that you may wish to correct in the next number, plus a few other anomalies for your information.

On page 24, the top photo is of *Dockrillia calamiformis* (Loddiges) M.A. Clem. et D.L. Jones

This North Queensland plant was known for many years as *Dendrobium teretifolium* var. *fasciculatum* but was never named as "*Dockrillia fasciculata*" (or with the spelling of "*fasiculata*" as it appeared). Along similar lines, "*Dockrillia beckeri*" (bottom of page 23) is an invalid name, as this is *Dockrillia schoenina* (Lindley) M.A. Clem. et D.L. Jones. Sadly, throughout the text the incorrect terms (p.23 "*Dockrillia teretifolium*" (should be *Dockrillia teretifolia*), "*Dockrillia pugioniforme*" (should be *Dockrillia pugioniformis*) – this also appeared on the hybrid photo caption, and on p.26 "*fairfaxii* 'Aureum'", would in fact be *dolichophylla* and the name *D. fasciculatum* reappears. With *D. XGrimesii* the natural hybrid should have been written as *D. Xgrimesii*.

The bottom photo on the same page is the highland New Guinea species *Dockrillia chordiformis* (Kraenzl.) Ormerod.

It is not, to quote the text a "yet to be described PNG species", it was initially described as *Dendrobium chordiforme* back in 1901 but not validly published until 1910 – almost 100 years ago. It is quite different to the rare tropical lowland species *Dockrillia flagella*. I have attached photos of both taxa for your info. Also the term "*flagellum*" is only applied when it is referred to as a *Dendrobium*, and *flagella* when as a *Dockrillia*.

Sadly, there was no name applied to the hybrid on page 28 (just as *Dockrillia* 'Blue'). I'm sure the readers (like myself) would

like to know what it is, as the colours are stunning if they are indeed true to life.

The comment on its "upside down flowering habit....to ensure that the pollinators...have access to a dry stigmatic surface" is completely without foundation (the stigmatic cavity IS moist and sticky), and simply, considering the positioning of the flowers, doesn't make sense! As does the comment on page 26 "There would be nothing worse than a wet stigmatic surface to discourage an enthusiastic pollinator" ????

The attempted nomenclatural history in the second paragraph for *Dockrillia striolata* is incomplete, inaccurate in part and overall confusing to the reader.

The true *Dockrillia striolata* history is briefly:

- **1839**, appears in Edwards's Botanical Register as "*Dendrobium teretifolium*" – this was a misidentification; it was never "named" as *Dendrobium teretifolium*.
- **1857**, described as *Dendrobium striolatum* H.G. Reichb., from plants in cultivation in Germany. There is no known Type locality for this collection.
- **1859**, plants from Flinders Island (Bass Strait) described as *Dendrobium milliganii* F. Muell. However the author was unaware that it had indeed been described two years previously, so becomes synonymous. The plants are like the Type form, not fitting with the mainland Tasmanian plants. I have plants from Strzelecki's Peak that confirm this.
- **1891**, reclassified as *Callista striolata*, this treatment is flawed and had little support.
- **1983**, reclassified by Rauschert as *Dockrillia striolata*, its currently accepted name.
- **1998**, *Dockrillia striolata* subsp. *chrysantha* described by David Jones to account for the mainland Tasmanian population of plants.

- **2005**, *Dockrillia banksii* described by Clements and Jones to cover the large flowered, mushroom to brown flowered large ruffled lipped northern populations – previously known as the “Watagans form” of *Dockrillia striolata*. (Predictably the author chose not to even mention this – both due to its name and he simply doesn’t understand the concept, as highlighted on his website.)

The RHS has indeed now been accepting the name *Dockrillia* for hybrids – they still are under the *Dendrobium* heading, but the alternate names are given. Certainly a better situation than we had a decade ago, and we should follow Australian (not British) thinking anyway.

The cultivation notes are sound, and these assumingly have been applied using the authors own experiences and what has been passed onto him from his mentors. Whilst I think of it, will you be providing the clonal names for the awarded plants that appeared in the June 2008 issue? I am referring to Award numbers 134 and 135 – both listed as *Dendrobium speciosum* (‘National White’ x ‘Ted’), but owned by different people and assuming they are different seedlings from this sibling or intervarietal cross. They would require separate clonal or cultivar names so they can be differentiated.

I am sorry that I felt compelled to write to you on these terms Peter, but I find it frustrating when some people unintentionally re-write history. Basically, basic errors should not be perpetuated (and the continued use of the term ‘Black Pam’ should be discouraged). As you know, I have been heavily involved with the cultivation, taxonomy and research within the genus *Dockrillia*, and this published information that is freely available, having had various *Dockrillia* articles published in *The Orchadian*, *Orchids Australia* and the *Australian Orchid Review* over the past decade or so.

Having said all this Peter, I must commend the excellent educational well thought-out and structured article by David Butler on “Yellow Sarcanthinae Hybrids” – now that is essential reading with wonderful photographs.

Kind regards,
David

David Banks

Hills District Orchids

Website: www.hillsdistrictorchids.com

Australian Orchid Review

39 Carole Street, Seven Hills NSW 2147

02 9674-4720 or 0412-123036

Hi David,

Thanks for forwarding the information and corrections to the article. *Dockrillia*’s have become a popular genera to grow, as you well know, and the hybrids that are being produced are indeed spectacular. Bill Dobson has supplied the full name for his orchid which appeared as *Dockrilla* “Blue” in the last issue, it is:

Dockrillia ((*mortii* x (*fuliginosa* x *convoluta*) ‘Orange Glow’ x ((*mortii* x *fuliginosa*) x *striolata* ‘Neville’) ‘Big Time’) ‘BLUE’.....and the photo is a good representation of the colour, but it is the size of the flowers that also makes this clone very desirable. If anyone can give the up to date hybrid name for this cross I’m sure Bill would be most appreciative.

Unfortunatley I’m sure politics plays a lot in the acceptance of a species. I remember speaking to two different well know orchid identities last year on the differences of the *Dockrillia striolata* and *D. banksii*, one saying they have seen them both in the wild and there was no difference other than the flower size, the other saying they had also seen them both in the wild and the differences were chalk and cheese.

Nevertheless, thanks again David and it is good to hear from you again.
Regards Peter



The finding of *Caladenia cadyi* (*Arachnorchis cadyi*).

Leo Cady
5 Weir St
Kiama NSW 2533

In the spring of 1958 (30-9-58), my first wife Edna and myself decided to have a collecting trip to one of our regular areas in the Jervis Bay region. In those days none of the sites were fenced and plant collecting was not frowned on as it is today.

We had decided to look over a section of bush just off the road between Jervis Bay Road and Tomerong on the South Coast of New South Wales.

The region of bush was dry open forest consisting of *Eucalyptus*, *E. gummifera*, *E. botryoides* and *E. sclerophylla* trees, *Casuarina torulosa* and *Leptospermum* plants. The surrounding area beneath the *Casuarina* trees had an undergrowth of lower shrubs and sparse grasses.

We had not been to this pocket of bush before and this particular area had a collection of the above plants, widely spaced on the edge of a shallow depression. The depression was a damp sheltered area with many patches of moss.

Plants found on the ground among the orchids were *Drosera spathulata*, *D. peltata*, *D. auriculata* and *D. pygmaea*. There were many terrestrial orchids, e.g. *Caladenia carnea* (*Petalochilus carneus*), *C. catenata* (*P. catenatus*), *C. tessellata* (*A. tessellata*), *C. testacea* (*Stegostyla testacea*), *Thelymitra ixioides*, *T. media* var. *carneo-lutea*, (only one was ever found in this area and the plant pressing was compared with W. H. Nicholls type specimen in the Melbourne Botanical Gardens by Dr. Jim Willis) *T. carnea*, *T. pauciflora*, *Cryptostylis subulata* and *C. erecta* were also present.

With great delight and surprise we saw the spider orchid. When first seen we counted approximately 15 plants the first year, we went back in 1959 and also 1960, the plants had multiplied by a small number to about

28. Prior to this finding the only spider type seen was *C. tessellata* which was found closer to the Huskisson Township.

In 1961 we went back to the area to review the number in flower that year but to our horror and great anger the area had been completely wiped out by a bulldozer for use as a plantation for *Pinus radiata* trees. The irony of the whole disaster was a couple of years later a bushfire went through the area wiping out the complete plantation.

Things do not move fast in the botanical world, we found the plant on the 30-9-58 and it was described in the Australian Orchid Research Volume 5; 2006 - 42 years later.

We all feel if the plant can be recognised it may be found by some new collector and its area could be extended.

-oOo-

Advertising Costs Per Four Issues, June - March.

1/6 page \$120.00

1/4 page \$160.00

1/2 page \$300.00

Space is available, please contact the
Treasurer for further information

PO Box 318,
Willoughby, NSW 2068
or through the web site
www.anos.org.au

Notes on the *Cleisostoma gjellerupii* (J.J.Sm.) Garay complex in New Guinea.

Paul Ormerod,
P.O. Box 8210,
Cairns 4870, Queensland, Australia.
Email: wsandave@bigpond.net.au

Abstract: Study of the literature and herbarium material referable to the *Cleisostoma gjellerupii* complex from New Guinea leads to the recognition of four species. One of these taxa, *C. paludosum*, is reinstated, whilst another two taxa, *C. clemensiae* and *C. isuaravanum* are described as new. All four species are illustrated and a key is provided to differentiate between them.

Cleisostoma Blume is a genus of 95 -100 small flowered species when construed in the broad sense. The genus is richly represented on the Southeast Asian mainland but it has satellite areas of speciation on the Malesian islands, especially Borneo (ca. 22 species). In New Guinea there are about ten species, these are *C. buruense* (J.J.Sm.) Garay, *C. clemensiae* Ormerod, *C. firmulum* (Rchb.f.) Garay [Syn.: *C. bicornis* (J.J.Sm.) Garay; *Sarcanthus decurvicar* J.J.Sm.], *C. gjellerupii* (J.J.Sm.) Garay, *C. isuaravanum* Ormerod, *C. litoreum* (Schltr.) Garay, *C. micholitzii* Krzl. [Syn.: *C. quinquefidum* (Lindl.) Garay nom. illeg.; *Sarcanthus robustus* Schltr.], *C. paludosum* (van Royen) T.M. Reeve, *C. platystele* Ormerod and *C. stimulatix* Ormerod.

An eleventh but undescribed New Guinea species was figured by O'Byrne (1994) as *C. aff. bicornis* (J.J.Sm.) Garay. I have also seen material of this entity collected by C.E. Carr but it is insufficient for a formal description. Apart from the present paper, the most recent treatment of New Guinean *Cleisostoma* species was supplied by Schuiteman and de Vogel (2004) who added *C. buruense* to the flora and recognised seven species to which they supplied a key.

The *C. gjellerupii* complex is so far a group of four closely related taxa that can be distinguished from the other New Guinean *Cleisostoma* species by their flowers which have greenish sepals and petals that are blotched (not striped or unmarked) with brown and the labellum midlobe has a basal

medial triangular callus.

Key to Species Treated.

A. Labellum with a small lobule each side at junctions of outer margins of the midlobe and sidelobes....B

AA. Labellum lacking a small lobule at junctions of outer margins of the midlobe and sidelobes....*C. clemensiae*.

B. Leaves ligulate to oblong-ligulate; labellum midlobe with an upward-pointing, acute medial callus....C

BB. Leaves ovate-elliptic; labellum midlobe with a forward-pointing, obtuse medial callus....*C. paludosum*.

C. Lateral sepals obliquely elliptic, 3.4 mm wide; labellum sidelobes rectangular....*C. isuaravanum*.

CC. Lateral sepals obliquely oblong, 2.5 mm wide; labellum sidelobes triangular...*C. gjellerupii*.

***Cleisostoma clemensiae* Ormerod, sp. nov.**

TYPE: Papua New Guinea. Morobe Prov., A-mieng (A-mien), on Yaneng (Yanem) River, a tributary of the Buso River, above mouth of Tosapik Creek, 1525-1830 m, 21 May 1941, M.S. Clemens 12203A (Holotype: AMES!).

Affinis C. gjellerupii (J.J.Sm.) Garay sed inflorescentibus paniculatis (non racemosis), conjunctis exterioris epichilo hypochilo labello ecallosis (non callosis) et callus epichilo oblique triangularibus (non equaliter triangularis) differt.

Stems erect or becoming erect from a

decumbent base, slightly compressed, oval in cross-section, leafy near apex, concealed throughout by leaf sheaths, 4.0-26.2 cm long, 0.3-0.6 cm thick. Leaves elliptic, oblong to ligulate, apex evenly rounded to inequally obliquely truncate to obtusely bilobed, margins entire to minutely denticulate, thickly coriaceous, midvein carinate below, 4.5-15.5 cm long, 1.7-3.1 cm wide. Inflorescence erect, paniculate, rarely racemose, to ca. 34 cm long; peduncle 5.5-16.7 cm long; sheathing bracts 1 or 2, tubular, 0.55-0.60 cm long; panicle 7.0-18.5 cm long, 1-6 branched, branches patent to erect, each laxly partly sequentially 5-14 flowered, 3-8 cm long; floral bracts broadly ovate, acute, 2 mm long and wide. Pedicellate ovary 3.0-3.5 mm long. Flowers with brown mottled sepals and petals, base of spur white, lip with purple marks inside. Dorsal sepal broadly elliptic, obtuse, 5 mm long, 3.3-3.4 mm wide. Lateral sepals obliquely obovate-elliptic, subacute, 6 mm long, 3.3 mm wide. Petals oblong, acute, 4.7 mm long, 1.8 mm wide. Labellum spurred, trilobed; spur ellipsoid-conical, obtuse, 3.4 mm long dorsally; backwall callus bifurcate, pubescent ventrally, sealing the spur entrance by its proximity to the frontwall callus but the former can be pushed back so entry can be gained, behind the backwall callus is a transverse membrane connected to each side of the spur and the back of the callus that acts like a spring; frontwall callus fused to sidelobes, lunate (viewed from above), upper half papillose to pubescent; sidelobes obliquely rectangular-deltate, subacute, 2.2 mm tall, 1.5 mm wide apically, ca. 1 mm wide medially; midlobe oblong-lanceolate (viewed from above), obtuse, fleshy, basally with a fleshy obliquely triangular medial callus, 4 mm long, 2 mm wide. Column semicylindric, 2.8 mm long, basally dilated to form a 'foot' ca. 1 mm long; rostellum very short, bifid; anther cap and pollinarium not seen.

Distribution: Papua New Guinea.

Specimens examined: Papua New Guinea. Morobe Prov., A-mieng, on Yaneng River, above mouth of Tosapik Creek, 1525-

1830 m, 22 April 1941, *M.S. Clemens* 12082 (AMES); Matap, 1525-1830 m, 6 February to 6 April 1940, *M.S. Clemens* 41071 (AMES).

Etymology: Named in honour of Mary Strong Clemens (1873-1968), who made the first collections of this species.

Notes: This species was first recognised by Louis Williams in the 1940's at Harvard who gave it the manuscript name "*Sarcanthus clemensiae*". It seems to be most similar to *C. gjellerupii* but differs from the latter in having paniculate (not simple) inflorescences and flowers in which there are no calli on the outside at the junctions of the midlobe and sidelobes, and the midlobe has an obliquely (not evenly) triangular basal callus.

Cleisostoma gjellerupii (J.J.Sm.) Garay, Bot. Mus. Leaf. Harv. Uni. 23, 4:171, 1972. Basionym: *Sarcanthus gjellerupii* J.J.Sm., Repert. Sp. Nov. Regni Veg. 10:488, 1912. TYPE: Indonesia. Papua Prov., Cyclops Range, 2000 m, June 1911, *K. Gjellerup* 555 (Holotype: BO).

Distribution: Indonesia (Papua Prov.).

Notes: This species is most similar to *C. isuaravanum* with which it shares strap-shaped leaves, unbranched inflorescences and flowers with a triangular, acute midlobe callus. However *C. gjellerupii* differs from *C. isuaravanum* in having narrower lateral sepals and triangular (not rectangular) labellum sidelobes.

Thus in the shape of the labellum sidelobes *C. gjellerupii* is more like *C. paludosum* but the latter differs in having ovate-elliptic (not ligulate) leaves, broader (4 vs. 2.5 mm) obliquely elliptic (not oblong) lateral sepals and an obtuse, forward-pointing (not acute, upward-pointing) midlobe callus.

Cleisostoma isuaravanum Ormerod, *sp. nov.*

TYPE: Papua New Guinea. Central Prov., Isuarava, 1370 m, 26 February 1936, *C.E. Carr* 10581 (Holotype: AMES!; Isotype: A!).

Affinis C. gjellerupii (J.J.Sm.) Garay *sed sepalis lateralibus oblique ellipticis (non oblongis) et lobis lateralibus rectangularis (non triangularis) differt.*

Stems leafy, concealed by imbricating leaf sheaths, rooting from below leaves, 11.0-17.5 cm long, 0.2-0.3 cm thick, 0.7-1.0 cm wide (measured across stem and leaf sheaths); internodes 0.8-1.5 cm long. Leaves ligulate, apex acute to subacute, V-shaped in cross-section, fleshy, 5.4-7.5 cm long, 1.44-1.60 cm wide; leaf sheaths striate, truncate, 1-2 cm long. Inflorescence emerging from axils of upper leaves, simple, 13.5-15.0 cm long; peduncle 11.0-11.5 cm long; sheathing bracts 3, lax, 0.3-0.5 cm long; rachis more or less successively flowered, 2.5-3.5 cm long; floral bracts ovate, acute, fleshy, 3 mm long, 2.1 mm wide. Pedicellate ovary six ribbed, 6.5-7.0 mm long. Flowers with sepals and petals green blotched with pale brownish olive, lip white, sidelobes with the bases yellowish, speckled red inside, midlobe with a broad marginal lilac band and two purple spots above the base, column yellow green, anther cream. Dorsal sepal elliptic, obtuse, hooded over column, 5 mm long, 2.9-3.0 mm wide. Lateral sepals obliquely elliptic, subtruncate-obtuse, reflexed, 5.3 mm long, 3.4 mm wide. Petals obliquely oblanceolate-oblong, acute, porrect, 4.75 mm long, 1.75 mm wide. Labellum spurred, trilobed; spur conical, obtuse, ca. 3.6 mm long dorsally; backwall callus bifurcate, erect, pubescent ventrally, ca. 2.2 mm long dorsally; frontwall callus fused to sidelobes, lunate (viewed from above), front and back papillose-pubescent; sidelobes rectangular, inside the front edge with a longitudinal thickening, 2.6 mm tall, ca. 1.3 mm wide apically; midlobe ovate-lanceolate (viewed from above), obtuse, fleshy, 4 mm long, 2 mm wide across base, at junction with sidelobes each side with an external, short, obtuse lobule or thickening ca. 0.3 mm long, medially with a triangular, upward-pointing, acute basal callus. Column (including anther cap) 3.5 mm long.

Distribution: Papua New Guinea.

Etymology: The specific epithet commemorates Isuarava, the type locality.

Notes: This species is closely related to the West New Guinean *C. gjellerupii* but it differs from the latter in having broader (3.4 vs. 2.5 mm), obliquely elliptic (not oblong) lateral sepals and a labellum with rectangular (not triangular) sidelobes. *Cleisostoma isuaravanum* differs from the West New Guinean *C. paludosum* in having a labellum with rectangular (not triangular) sidelobes, a dorsally straight (not curved) frontwall callus and an upward-pointing, acute (not forward pointing, obtuse) midlobe callus.

Cleisostoma paludosum (van Royen) T.M. Reeve, *Orchadian* 6, 12:286, 1981.

Basionym: *Sarcanthus paludosus* van Royen, *Alp. Fl. New Guinea* 2:803, f.278, 1979.

TYPE: Indonesia. Papua Prov., 6 km NE of Lake Habbema, 3000 m, October 1938, L.J. Brass 10681 (Holotype: L; Isotype: AMES!).

Distribution: Indonesia (Papua Prov.).

Notes: The original figure of this species by van Royen (1979) does not show the characters of the labellum clearly. Therefore I have supplied an illustration showing the critical features of the labellum based on an isotype in AMES. Reeve (1981) notes the occurrence of *C. paludosum* in Papua New Guinea but the variability he records in leaf shape and inflorescence branching more than likely indicates that other similar taxa could be involved.

Acknowledgements.

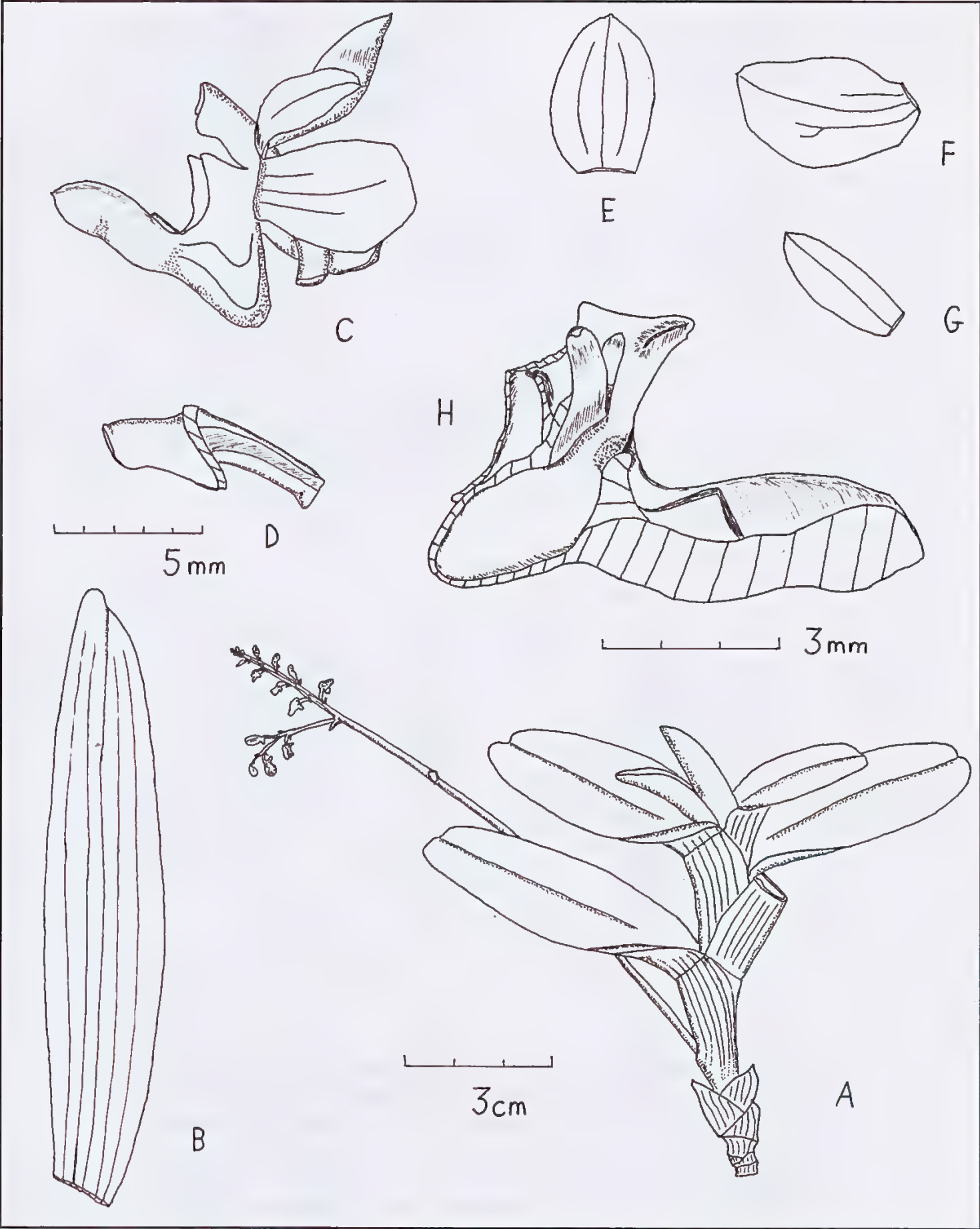
I wish to thank herbarium and library staff at HUH (A, AMES, GH), K, LAE and NSW for their help and hospitality during my visits.

Literature Cited.

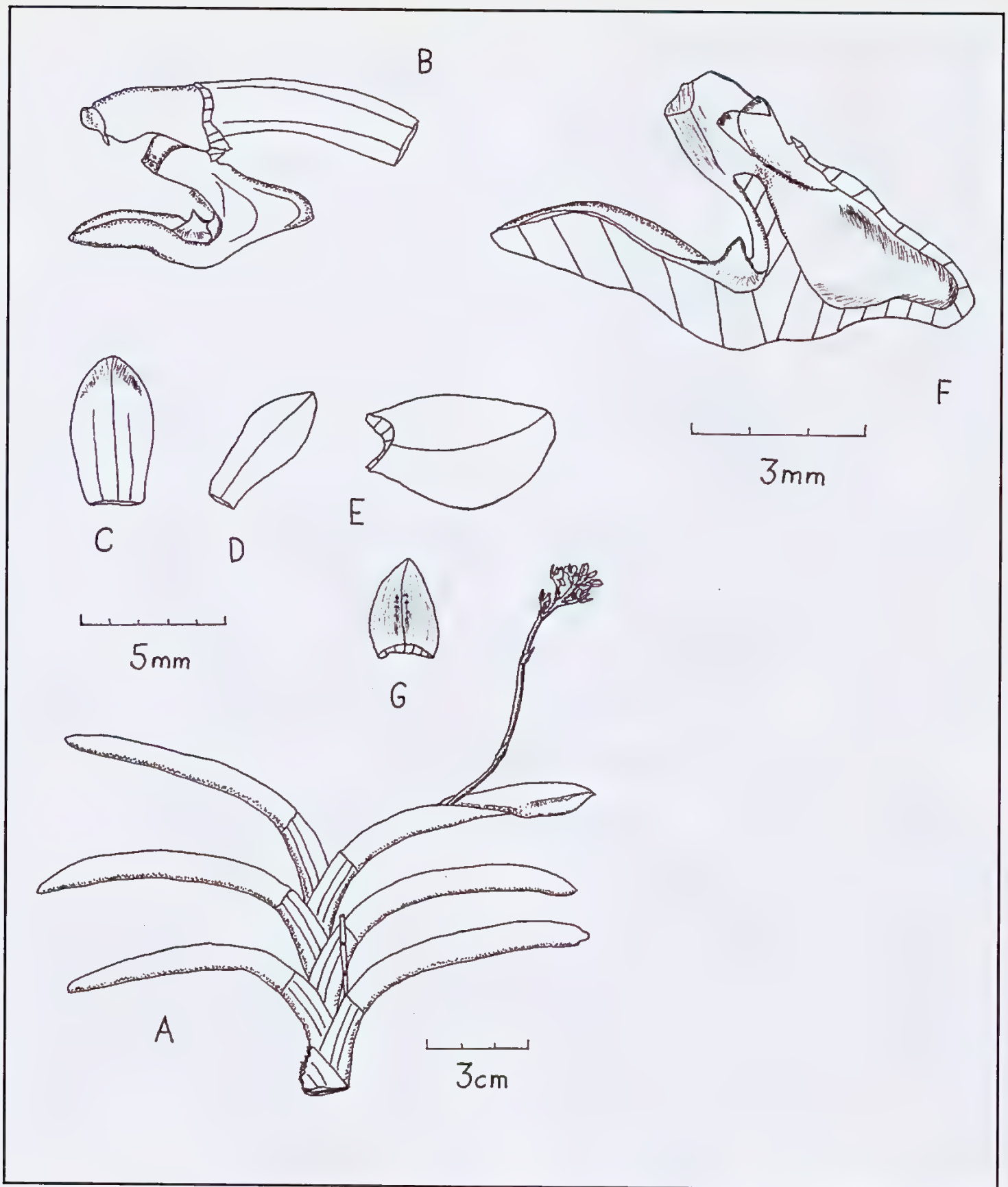
- O'Byrne, P. 1994. *Lowland Orchids of Papua New Guinea*. SNP Publishers, Singapore.
Ormerod, P. 1996. Notes on the Orchids of New Guinea and the Pacific 1. *Austral. Orch. Rev.* 61, 4:36-39.
Reeve, T.M. 1981. Miscellaneous Notes on New Guinea Orchids 2. *Orchadian* 6, 12:286-287.

Schuiteman, A. & de Vogel, E. 2004. *Cleisostoma buruense*. A first record from New Guinea with a key to the species of *Cleisostoma* in New Guinea. J. Orchideenfr. 11, 2:161-171.
Smith, J.J. 1913. Die Orchideen von

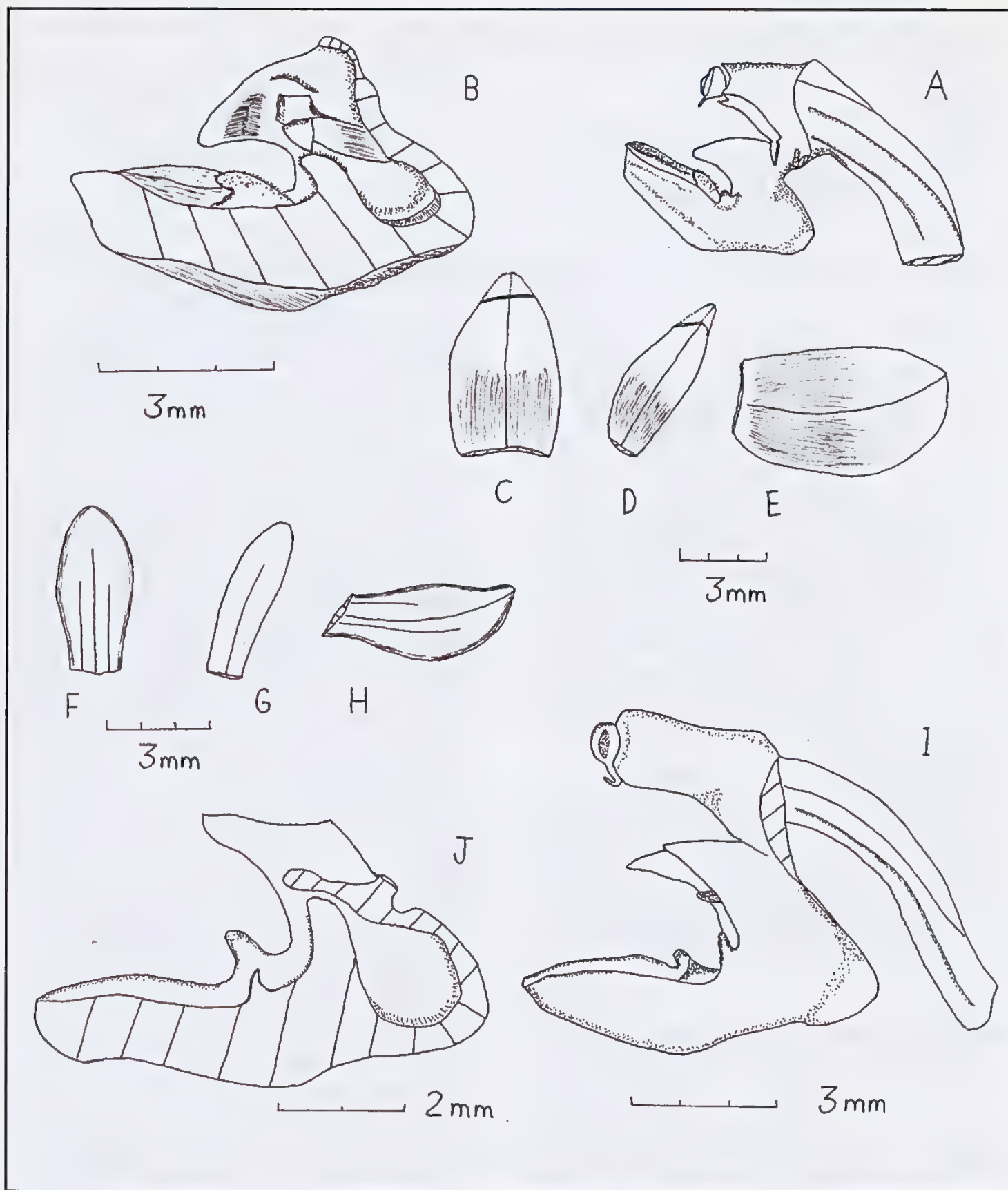
Niederlandisch-Neu-Guinea. Nova Guinea 12, 1: 1-108 + 28 plates.
van Royen, P. 1979. Orchidaceae in The Alpine Flora of New Guinea 2:51-811.
-oOo-



Cleisostoma clemensiae - A. small flowering stem; B. leaf; C. flower; D. flower minus segments; E. dorsal sepal; F. lateral sepal; G. petal; H. longitudinal section. AB,D-G and H to respective scales. Drawn from holotype.



Cleisostoma isuaravanum - A. plant; B. flower minus tepals; C. dorsal sepal; D. petal; E. lateral sepal; F. labellum, longitudinal section; G. floral bract. A,B-EG and F to respective scales. Drawn from holotype.



Cleisostoma paludosum (van Royen) T.M.Reeve - A. flower minus tepals; B. labellum, longitudinal section; C. dorsal sepal; D. petal; E. lateral sepal.

Cleisostoma gjellerupii (J.J.Sm.) Garay - F. dorsal sepal; G. petal; H. lateral sepal; I. flower minus tepals; J. labellum, longitudinal section. A-E from Ames isotype, F-J after Smith (1913).

Calochilus kalaru (Orchidaceae), a poorly known but endangered new species from south-eastern New South Wales

David L. Jones,
Kalaru, NSW, 2550

Abstract

Calochilus kalaru, a localised, poorly known and threatened species from south-eastern New South Wales, is described as new.

Key Words

Orchidaceae, *Calochilus kalaru*, new species, threatened flora, New South Wales, Australian flora.

Introduction

Continuing studies into *Calochilus* have revealed a distinctive undescribed species from south-eastern New South Wales that is here described as new. The new species is currently known from only a single small population that occurs on private land. Although substantial areas of reserved habitat potentially suitable for growth of the orchid occur in a nearby National Park, it has not been located there during limited searching. It should be mentioned however, that recent exceptionally dry years in the area, particularly lower than average winter/spring rainfall, may have impaired flowering and hampered the discovery of additional populations.

Materials and Methods

Descriptions of taxa were made from fresh specimens. Dried specimens of *Calochilus* were examined from the following herbaria; AD, BRI, CANB, CBG, HO, MEL and NSW. Unless otherwise indicated, all types of *Calochilus* relevant to this study (or photographs thereof), and collections cited, have been seen by me.

Taxonomy

Calochilus kalaru D.L.Jones, *sp. nov.*; affinis *C. gracillimo* Rupp, sed plantis celsioribus; folio latiore, glaucoso-pruinoso; sepalo dorsali elliptico; petalis valde uncinatis; labello in basali quarta late obovato, cauda apicali latiore et longiore; columna multo latiore, utraque ala puncto succulento verrucoso, differt; quoque a *C. sandrae* D.L.Jones, sed labello longiore, multo angustiore et cauda apicali longo, differt.

Type: New South Wales. Kalaru, 26 Dec. 2007, D.L.Jones 19376 & B.E.Jones (holo CANB; iso NSW).

Description: *Tubers* not seen. Whole plant glaucous-pruinose. *Leaf* fully developed at anthesis; lamina narrowly linear-lanceolate, 12-28 cm long, 6-10 mm wide, trigonous, glaucous-pruinose; base reddish; anterior surface deeply

channelled; dorsal surface keeled; apex long-acuminate. *Inflorescence* 50-80 cm long, slender. *Sterile bracts* 4, the lowest one emerging just above the leaf, narrowly linear-lanceolate, 4-10 cm long, 3-5 mm wide, erect; margins involute; apex long-acuminate, often curved. *Fertile bracts* narrowly ovate-lanceolate, 1-2.5 cm long, 2-4 mm wide, closely sheathing; margins involute; apex long-acuminate. *Pedicels* 6-15 mm long, slender, straight. *Ovaries* obovoid, 6-9 mm long, c. 3 mm wide, at an angle to the pedicel. *Flowers* 3-10, c. 20-25 mm long, c. 10 mm wide; sepals and petals brownish green with faint red lines; labellum calli brownish purple (iridescent in sunlight), those towards the apex lighter and marked with red, the basal calli purple. *Dorsal sepal* oblong-elliptical, 14-16 mm long, 7-8 mm wide, obliquely erect, concave; apex mucronate. *Lateral sepals* asymmetrically lanceolate, 14-16 mm long, 4-5 mm wide, divergent; distal margins involute; apex acuminate. *Petals* asymmetrically ovate, 7-8 mm long, 4.5-5.5 mm wide, porrect; apex uncinata, subacute to apiculate. *Labellum* obliquely deflexed, marked with dark red; lamina 26-30 mm long, c. 8 mm wide, c. 3.5 mm wide at the base; main part oblong-obovate, narrowed above the widest point into a tapered section c. 4 mm long, ending in a slightly tapered ligulate portion 15-20 mm long. *Labellum margins* with numerous (c. 18-25) crowded, simple, bifurcate or trifurcate, narrowly linear, glandular and non-glandular, spreading, acuminate lobes 3-4 mm long; distal ligulate portion c. 10 mm long, entire, glandular. *Labellum calli* covering most of the ventral surface; proximal quarter densely covered with crowded, irregular, short, thick, purple calli; central area densely covered with linear brownish purple calli 3-4 mm long; main area covered with linear, non-glandular and glandular, porrect and spreading brownish purple calli and pale calli to 4 mm long; calli glands green to red. *Column* 5.5-5-6.5 mm long, c. 4 mm wide, pale green, densely irregular translucent area on the dorsal surface flanking the anther; wings broad, the inner basal margin

of each with an anterior yellowish eye-spot with a dark purple apex, these connected by a purple anterior ridge. *Anther* pale green, obliquely erect. *Pollinia* narrowly clavate, c. 2.8 mm long, c. 0.5 mm wide, curved, pale yellow, mealy. *Capsules* obovoid, 12-15 mm long, 5-7 mm wide, erect, ribbed. **Fig. 1.**

Distribution and ecology: Known with certainty only from a single small population (nine plants) on private property at Kalaru, between Tathra and Bega, on the South Coast of NSW. The species grows among grass on the edge of a small patch of open forest dominated by *Eucalyptus sieberi*. The soil is a dark grey gravelly loam formed from decomposed granite. Alt. c. 50 m. Flowering: December and January.

Recognition: Characterised by late flowering period, tall slender habit, all parts glaucous-pruinose, elliptical dorsal sepal, strongly uncinuate petals, and a labellum that is broadly obovate in the proximal quarter and suddenly tapers inwards above the widest point, ending in a long slightly tapered tail that is free of marginal teeth in the distal half. It also has a relatively broad column with very prominent, fleshy, strongly verrucose apical appendages on the wings.

Similar species: Four species of late-flowering *Calochilus* are now recognised in south-eastern Australia. Two of these, *C. sandrae* D.L.Jones and *C. therophilus* D.L.Jones, occur in montane habitats and *C. gracillimus* Rupp is commonly found at relatively low altitudes on Sydney sandstone formations on the Central Coast, but extends to about 1000 m in the Blue Mountains. The new species described here, which occurs in a lowland coastal habitat, has some similarities with *C. gracillimus* Rupp however, the ranges of the two species are well separated. *Calochilus kalaru* can be distinguished from *C. gracillimus* by its taller habit, strongly glaucous-pruinose, broader leaf (narrow green leaf in *C. gracillimus*), elliptical dorsal sepal (broadly ovate in *C. gracillimus*), strongly uncinuate petals (nearly straight to shallowly hooked in *C. gracillimus*) and a broader labellum that is obovate in the proximal quarter, with narrower marginal lobes and longer, wider apical tail. Additionally its column is broader (4 mm wide) than that of *C. gracillimus* (3 mm wide) and has very prominent fleshy apical appendages on the wings that are strongly verrucose over most of their length. By contrast the apical appendages on the column wings of *C. gracillimus* are verrucose but almost vestigial and hardly extend onto the anther.

Calochilus therophilus has similarities with both species but is much more robust with larger, prominently ribbed leaves, stouter scape, and an ovate-lanceolate labellum that tapers evenly from the widest point to the apex. Its plants are also green, not glaucous/pruinose. *Calochilus sandrae* D.L.Jones can be distinguished from both by its shorter, broader labellum with a short apical tail and brownish-purple labellum calli and hairs. The short densely hairy labellum of this species imparts a bushy appearance to the flowers of this species. Photos of the flowers of *C. gracillimus*, *C. therophilus* and *C. sandrae* are included in Jones (2006).

Calochilus platychilus D.L.Jones also occurs at the Kalaru site but that species finishes flowering 4-6 weeks before *C. kalaru* begins flowering.

Notes: Each flower of the new species lasts 1-2 days before closing and 1-3 flowers are open at once. The flowers are autogamous and no insect activity has been observed. In cool weather the perianth segments do not expand widely and the flowers appear to only open partly.

Conservation status: Known only from a small population at a single locality on private property; not located elsewhere after limited searching but searching was hampered by exceptionally dry seasonal conditions; further searches will be carried out in the local area to locate other populations; currently the species has no security of tenure and I suggest a code of 1EK by the criteria of Briggs & Leigh (1996).

Etymology: The name *kalaru* refers to the only known locality and is applied as a noun in apposition.

Other specimen: NEW SOUTH WALES: Kalaru, Dec. 2006, D.L.Jones & B.E.Jones (CANB).

Acknowledgements

I thank Laurie Adams for the Latin diagnosis, Emma Clifton for technical assistance and Peter Eygelshoven for scanning the drawing. I also thank my wife Barbara for help monitoring the population. The directors of AD, BRI, CANB, HO, MEL, NSW are thanked for providing access to specimens.

References

- Briggs, J.D. & Leigh, J.H. (1996). *Rare or Threatened Australian Plants*, Revised Edition, CSIRO and Australian Nature Conservation Agency.
- Jones, D.L. (2006). *A Complete Guide to Native Orchids of Australia*. Reed New Holland, Sydney.



Caption

Fig. 1. *Calochilus kalaru* D.L.Jones, Kalaru, NSW, DLJ 19376 (part of type collection). a. flowering plant; b. cross-section of leaf; c. flower from front; d. flower from side; e. labellum from above, flattened; f. labellum from below; g. column from front; h. column from side; i. pollinium; j. dorsal sepal; k. lateral sepal; l. petal.

Orchids Australia

OFFICIAL PUBLICATION OF THE
AUSTRALIAN ORCHID COUNCIL

92 Pages
Eye-catching Colour

Subscription Rates
within Australia \$50.00 p.a.
e-mail: neila.hardstaff@bigpond.com
Check out our home page on the internet

www.orchidsaustralia.com

Orchids Australia
PO Box 1031, Launceston, Tas 7250

Mastercard and Visa

(Advise Card, Name,
Number and Expiry date)

AUSTRALIAN ORCHID RESEARCH Volume 5. 2006

New Taxa of Australasian Orchidaceae.
by David L. Jones and Mark A. Clements
et al

Published by the Australian Orchid
Foundation 2006.

ISBN 0-9595384-8-8.
Price: \$40.00 plus postage.

Available through the
Australian Orchid Foundation
PO Box 322
Essendon North, Vic. 3041 Australia.
www.australianorchidfoundation.org.au
and through A.N.O.S. Inc.
(Through the bookshop,
www.anos.org.au)

The Australasian Native Orchid Society Inc.

ABN 88 676 231 296

P.O. 318 Willoughby, N.S.W. 2068 AUSTRALIA.

Badges

A.N.O.S. Membership Badge
(*Thelymitra ixioides*) \$5.00 ea

Conservation badges:-

1997 *Sarcochilus falcatus* \$5.00 ea
1996 *Pterostylis cucullata* \$5.00 ea
1995 *Prasophyllum petilum* \$5.00 ea
1994 *Dendrobium affine* \$5.00 ea
1993 *Thelymitra ixioides* \$5.00 ea
1991 *Thelymitra epipactoides* . \$5.00 ea
1990 *Dendrobium bigibbum* .. \$5.00 ea

A.N.O.S. Conference Badges:-

1st *Pterostylis gibbosa* \$3.00 ea
4th *Caleana major* \$5.00 ea

Plus postage and handling

1 to 6 badges (Australia) \$2.50 ea
1 to 6 badges (Overseas) \$5.00 ea
....

The following prices include postage and
handling....

A.N.O.S Medallions

Bronze and Silver: provision for engraving on
the reverse side \$15.00 ea

BOOKS

ANOS Hybrid Checklist (8th edition)

(Australia) \$28.50
(Overseas) \$35.00

Proceedings of the 1st Australasian Native Orchid
Conference (Australia) \$17.00
(Overseas) \$20.00

Proceedings of the 5th Australasian Native Orchid
Conference (Australia) \$25.00
(Overseas) \$30.00

Cultivation of Australian Native Orchids – 2nd
Edition: A.N.O.S. Victorian Group \$21.00

ANOS (QLD) KABI GROUP Inc.
SIXTH OPEN AUSTRALASIAN NATIVE ORCHID SHOW 2008

After many months of planning the ANOS (Qld) Kabi Group Inc. 6th Open Australasian Native Orchid Show took place during the weekend of 23-24 August 2008. Following an improved growing season this year we were looking forward to an even better benching display. However many growers reported having had a number of flowering plants prior to the Show with blooms that did not hold for the weekend. But the Show went on with a great display of blooms – the *Dendrobium speciosum* making up for the lesser benching this year of hybrids.

Champion Hybrid was *Dendrobium* Brinawa Sunset 'Heart Lip' owned by Brian Richards a member of the ANOS (Qld) Kabi Group Inc. The Champion Specimen was a plant of *Dendrobium* Rutherford Blushing Bride x *speciosum* var. *curvicaule* owned by Lloyd Edwards from *Earth to Joy Orchids* and Jon Cara's plant of *Dendrobium polysema* 'Bitech' won the Champion Species. Jon is also a keen member of ANOS (Qld) Kabi Group Inc. Christene Dennis won 1st prize in the Den Hybrid Other Class with a *Dendrobium mohlianum* x *melinanthum*.

It was very encouraging to see an increasing number of plants benched by other orchid society members and also growers from New South Wales, Hervey Bay and the Sunshine Coast. The show schedule was fully sponsored prior to commencement and all sponsors were acknowledged on the sponsor board at the Show. On Saturday plant sales were brisk with patrons enjoying the availability of various flowering plants from the three plant vendors - two of whom had travelled from interstate. The Lions Hall has been booked for 22-23 August 2009 already so planning can commence for the Spring Show for 2009.

On behalf of the committee I extend my thanks to all who supported us for the 2008 Spring Show.

Rhonda Harvey
Show Organiser
ANOS (Qld) Kabi Group Inc.



2008 Show benching in the Hall.



2008 Champion Hybrid won by Brian Richards – *Den. Brinawa Sunset* 'Heart Lip'.



2008 Champion Specimen won by Lloyd Edwards – *Den. Rutherford Blushing Bride* x *Den. speciosum* var. *curvicaule*.
Photos Graham Corbin

DIRECTORY OF A.N.O.S. GROUPS (& Associated Societies)

NEW SOUTH WALES

- **ANOS Central Coast**, P.O. Box 3010, Erina 2250. ☎(02) 4343-1809. Meetings 8pm, 2nd Wed. each month. Narara Community Centre, 2 Pandala Road, Narara. 2250
- **ANOS Far North Coast**, P.O. Box 949, Ballina 2478. ☎(02) 6686-6303. Meetings 7.30pm, 3rd Fri. each month. C.W.A. Room, River Street, Ballina.
- **ANOS Illawarra**, 2 Wiford St, Corrimal, 2518. ☎(02) 4284-8308. Meetings 7pm, 2nd Tue. each month. Legacy House, 96 Market St., Wollongong.
- **ANOS Macarthur & District**, 43 Strickland Cres, Ashcroft, 2168. ☎(02) 4626-1825. Meetings 8pm, 3rd Thur. each month. Narellan Community Hall, Queen St., Narellan.
- **ANOS Mid-North Coast**, 69 The Lakes Way, Forster 2428. ☎(02) 6554-9733. Meetings 12 noon, last Sunday each month follows by BBQ. (Held at Taree or Wauchope - phone Secretary for details).
- **ANOS Newcastle**, P.O. Box 4021, Rathmines 2283. ☎(02) 4975-3729. Meetings 7.30pm, 4th Thur. each month. John Young Community Hall, Thomas St, Cardiff.
- **ANOS Sydney**, 22 Rabaul Ave, Whalan. ☎(02) 9624-1768. Meetings 8pm, 3rd Fri. each month. Senior Citizens Hall, Baulkham Hills Community Centre (off Conie Ave.) Baulkham Hills.
- **ANOS Warringah**, P.O. Box 421, Forestville 2087. ☎(02) 9416-4306. Meetings 8pm, 3rd Tue. each month. Community Hall, Starkey St., Forestville.

QUEENSLAND

- **ANOS Beenleigh**, PO Box 1130 Beenleigh QLD, 4207. ☎ (07) 3805 6865 Meetings 7.30 1st Thursday each month Showground Hall, James St. Beenleigh.
- **ANOS Gold Coast**, P.O. Box 472, Biggera Waters Qld 4126. Meetings 1.30pm on the last Sunday of the month. Southport Community Centre, Lawson St, Southport.
- **ANOS Kabi**, PO Box 424, Aspley 4034. ☎ (07) 3359-5752 Meetings 7.30pm, 2nd Tue. each month (except Jan.). Bald Hills Memorial Hall, 2126 Gympie Rd., Bald Hills.
- **ANOS Mackay & Dist.**, PO Box 138, Koumala, 4738. ☎(07) 4950-1065. Meetings 7.30pm, 2nd Thursday of each month at the Andergrove Community Centre, Celeber Drive, Andergrove.
- **ANOS Townsville**, 92 Curie St, Wulguru, 4811. ☎(07) 4778-4311. Meetings 8pm, 1st Tue. each month. Townsville Orchid Society Hall, Pioneer Park (opp. Willows Shopping Centre), Thuringowa..
- **Native Orchid Society of Toowoomba**, P.O. Box 2141, Toowoomba 4350. Meetings 7.30pm, 1st Fri. each month. Luthern Church Hall, Cnr. West and Alderly Sts, Toowoomba.

VICTORIA

- **ANOS Geelong**, Unit2, 2 Elizabeth St., Belmont 3216. ☎(03) 5243-4286. Meetings 8pm, 2nd Wed. each month. Uniting Church Hall, Moorabool St., South Geelong.
- **ANOS Victoria**, P.O. Box 354, Glen Waverley 3150. ☎(03) 9387-2771. Meetings 8pm, 1st Fri. each month. Meetings at the Toorak Uniting Church Hall, 603 Toorak Road, Toorak. (Melways 58, K4)
- **ANOS Melbourne Suburbs Group**, PO Box 196, Bayswater Vic. 3153. ☎(03) 59622758. Meetings held on the 4th Wednesday of the month at 7.30pm at Montrose Primary School, Leith Rd., Montrose 3765 (Melways 52 D7)

SOUTH AUSTRALIA

- **Native Orchid Society of South Australia**, P.O. Box 565, Unley 5061. ☎(08) 8356-7356. Meetings 8pm, 4th Tue. each month. St. Matthews Hall, 67 Bridge St., Kensington.

WESTERN AUSTRALIA

- **ANOS Western Australia**, 10 Lothain St, Floreat, WA 6014. ☎(08) 9387-4210. Meetings 8pm, 2nd Mon. each month. Wilson Community Hall, Braibrise Rd., Wilson.

NEW ZEALAND

- **ANOS New Zealand**, Margaret Phair, 21 Paparoa Rd, Howick, Auckland, New Zealand.
- **New Zealand Native Orchid Group**, 22 Orchard St., Wadestown, Wellington, New Zealand.

The Australasian Native Orchid Society Inc.

ABN 88 676 231 296

P.O. 318 Willoughby, N.S.W. 2068 AUSTRALIA.

Back Issues Available:

(Some issues of 12 and 13 only have 2 or 3 copies left)

Volume 12 – Issues 5, 6, 7, 9, 10, 11.....	\$3 ea.
Volume 13 – Issues 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, ...	\$6 ea.
Volume 14 – Issues 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, ..	\$8 ea.
Volume 15 – Issues 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12...	\$8 ea.
Volume 16 – Issues 1	\$8 ea.

Also Available:

DRAWINGS

Superb colour prints of J.J. Riley's drawings on Australian Native Orchids are now available:

Set 1 – \$15.00

Pterostylis maxima, *Dipodium variegatum*, *Pterostylis daintreana*,
Pterostylis grandiflora, *Cryptostylis erecta*, *Genoplesium filiforme*,
Diuris lanceolata, *Rimacola elliptica*.

Set 2 – \$15.00

Pterostylis sanguinea, *Pterostylis depauperata*, *Acianthus caudatus*,
Caladenia concinna, *Chiloglottis truncata*, *Dendrobium kingianum*,
Sarcochilus australis, *Dendrobium striolatum*.

Set 3 – \$15.00

Dendrobium moorei, *Lyperanthus nigricans*, *Dendrobium bowmanii*,
Eriochilus cucullatus, *Pterostylis vittata*, *Sarcochilus ceciliae*,
Sarcochilus falcatus, *Cymbidium canaliculatum*.

Send orders to the above address.

Peter Eygelshoven
Editor, The Orchadian.



2008 Champion Species won by Jon Cara
Dendrobium polysema 'Bitech'

Photo Graham Corbin



Pterostylis Cutie 'Harold's Pride' which won
first prize in Class 32 – Terrestrial Hybrids.
grower Athol Rosenberg. Photo Jon Cara.

Christene Dennis won 1st
prize in the Den Hybrid Other
Class with a *Dendrobium*
mohlianum x *melinanthum*.
Photo Graham Corbin

